Unit One

Matching the Headings

Lắp ghép Tiêu đề và Bản văn

Một học sinh đã từng hỏi giáo viên: "Khi làm đề Heading, em không hiểu, nhưng tại sao luôn có thể làm đúng?" Không biết các học sinh, người đọc khác có thấy như thế không.

Giữa "hiểu" và "không hiểu" dường như rất rõ ràng. Khi còn nhỏ lúc học tiếng Việt, chúng ta không những phải biết ý nghĩa, cách đọc của từ, mà còn phải biết thứ tự các mẫu tự. Thói quen hình thành, phương pháp sử dụng và ranh giới giữa "hiểu" và "không hiểu" đã khiến chúng ta bây giờ không có được cảm giác "hiểu" khi học tiếng Anh. Vì vậy, giữa "hiểu" và "không hiểu" trong tiếng Anh có một khoảng cách không rõ ràng.

Học sinh đó chắc chắn hiểu, nếu không bài thi sẽ không có tỷ lệ chính xác cao. Học sinh đó nói "không hiểu" là bởi vì không có được cảm giác "hiểu" như khi đọc tiếng Việt.

Khi đọc tiếng Anh, không nên tìm kiếm cảm giác "hiểu" như khi đọc tiếng Việt. Nếu muốn đảm bảo xác suất hiểu (hoặc xác suất chính xác khi làm bài) trên 95%, tốc độ đọc chắc chắn sẽ giảm xuống, đến mức không thể hoàn thành bài đọc trong thời gian quy định. Tốc độ đọc và xác suất hiểu luôn mâu thuẫn nhau. Vì vậy, phải học cách chấp nhận xác suất hiểu không cao lắm để nâng cao tốc độ đọc lên. Sau khi đọc nhiều, trong trường hợp tốc độ không giảm mà thậm chí còn nâng lên thì điều đó có nghĩa là xác suất hiểu cũng từng bước được nâng cao.

Trở lại chủ đề, khi làm dạng đề Heading, cần có kỹ năng nào không? Có.

1. Gạch bỏ lựa chọn đã dùng trong example. Lựa chọn này đã dùng rồi, sẽ không dùng lại nữa. Khi gạch bỏ, mắt sẽ không dừng lại ở lựa chọn này nữa, qua đó làm tăng tốc độ đọc.

2. Mỗi khi đọc xong một đoạn, nhất định phải gạch bỏ một lựa chọn. Như vậy sẽ làm tăng tốc độ đọc lướt các lựa chọn Heading. Phần lớn các thí sinh thi IELTS là những người muốn ra nước ngoài học tập, nghiên cứu. Thông thường, các trường đại học ở Anh, Úc, Canađa v.v. đòi hỏi những người xin vào học chương trình thạc sĩ phải có tổng số điểm thi IELTS là 6.5, hơn nữa mỗi môn đều không được dưới 6 điểm. Điểm môn đọc và viết của học sinh Việt Nam cao hơn môn nói và nghe. Vì thế, muốn tổng số điểm đạt 6.5 thì môn đọc cần đạt 7 hoặc trên 7 điểm. Nếu không, tổng số điểm rất khó đạt được 6.5. Đối với các thí sinh hy vọng môn đọc đạt 7 điểm hoặc ít nhất là 6.5 thì nhất định phải có lòng tin vào phương pháp "đọc một đoạn, gạch bỏ một lựa chọn Heading".

3. Mỗi một đoạn tương ứng với một lựa chọn Heading. Câu "You may use any of the headings more than once" trong phần hướng dẫn là cái bẫy.

Một số tài liệu giảng dạy hoặc lớp luyện thi ra sức đẩy mạnh việc dùng "topic sentence" để phán đoán đại ý của đoạn văn. Quả thật, trong một số đoạn có "topic sentence", hơn nữa những câu này sẽ là câu đầu hoặc câu cuối của đoạn văn; nhưng cũng có một số đoạn có câu chủ đề nằm đâu đó ở giữa đoạn, thậm chí không phải là một câu đơn mà là hai câu, có khi ba câu. Kiểu đặt "topic sentence" này có lẽ sẽ có ích cho những thí sinh khá kém môn tiếng Anh, nhất là những người không có hy vọng môn đọc đạt trên 5 điểm. Nhưng đối với những thí sinh cần đạt 6.5 điểm trở lên thì nó không có ý nghĩa thực tế nhiều lắm. Đối với những thí sinh này, nếu gặp đề Heading khó thì câu chủ đề của đoạn văn đó chắc chắn không phải là câu đầu hoặc câu cuối của đoạn. Thật ra, kiểu đặt "topic sentence" này là một cách cứu nguy chưa hẳn hiệu quả mà thí sinh có thể dùng thử nếu thật sự không còn cách nào khác.

Ngoài ra, còn có phương pháp, kỹ năng nào khác có ý nghĩa thực tế không? Không, chỉ còn cách dựa vào thực lực.

Có những đoạn chọn tiêu đề rất dễ, có những đoạn rất khó. Một số đoạn có hai hoặc trên hai ý. Ý nào quan trọng hơn, tiêu đề nào khái quát những ý này, tất cả tùy thuộc vào khả năng đọc, không thể dựa vào kỹ năng hoặc mẹo vặt để giải quyết. Một số đoạn tư tưởng trung tâm rất khó nhận thấy, hoặc không có ý nào nổi bật, rất khó khái quát bằng nửa câu hay một câu. Chọn tiêu đề cho những đoạn văn này như thế nào, cũng chỉ có thể dựa vào khả năng đọc, không thể dựa vào kỹ năng.

Tuy nhiên, muốn môn đọc đạt được 7 hoặc 7.5 điểm, không cần phải làm đúng tất cả các câu. Có một hai đoạn "bó tay" cũng không sao. Nên bỏ qua thì phải bỏ qua, có sai sót cũng không sao. Điều quan trọng nhất là tìm sự cân bằng giữa thời gian và tỷ lệ chính xác.

Thí dụ:

The following reading passage has seven paragraphs A-G. Choose the most suitable headings for paragraphs B-G from the list of headings below. Write the appropriate numbers (i-ix) in the spaces provided.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i)	Dangers of passive smoking
(ii)	EPA's opinion of the lawsuit
(iii)	Activists' opinion of the lawsuit
(iv)	Tobacco industry vs. the EPA
(v)	Chances of developing lung cancer
(vi)	Stop the EPA
(vii)	Importance of cigarette warnings
(viii)	A groundless report
(ix)	A report as good as any

Example:	Answer:
Paragraph A	*iv*

1. Paragraph B __________
2. Paragraph C __________
3. Paragraph D __________
4. Paragraph E __________
5. Paragraph F __________
6. Paragraph G __________

Tobacco Industry Fumes over Passive Smoking

A America's tobacco industry has launched a fresh assault in its war against the anti-smoking movement. Six tobacco groups are suing the US Environmental Protection Agency, claiming that its recent report on the dangers of second-hand smoke is based on sloppy science and is unfairly damaging their trade. Anti-smoking groups say the lawsuit is a Canute-like attempt to stem a tide of anti-smoking legislation sweeping the US.

B In January, the EPA released a long-awaited report on passive smoking. It considered more than 30 studies around the world that compared the incidence of lung cancer in non-smoking women whose husbands smoked with that in those whose husbands did not. The report concluded that wives of smokers had a higher risk of developing lung cancer, and that the risk increased with the amount of smoke inhaled. Passive smoking causes 3,000 deaths a year from lung cancer in the US alone, it said. On the basis of this and other evidence — for instance, that smoke is clearly carcinogenic when inhaled directly — the EPA added environmental tobacco smoke to its list of known human carcinogens. The report also concluded that second-hand smoke aggravates asthma and causes respiratory illness and ear infections in children.

C The tobacco industry countered that the study was shoddy and misleading, characterized by "a preference for political correctness over sound science". The tobacco groups pointed out that the increased incidence of lung cancer was seen only when the statistical test was relaxed from the usual 95 per cent confidence to a less rigorous 90 per cent. They also accused the EPA of ignoring several studies that contradict the agency's conclusions.

D On 22 June, the six groups — Philip Morris, R. J. Reynolds Tobacco and four groups representing growers and retailers — jointly sued the EPA to have the study declared null and void, and to throw out human carcinogen classification, which they claim goes beyond the EPA's legal mandate. "Unfortunately, it is the tobacco farmers, their families and their communities who — if the EPA is not stopped — will have to pay for this misguided actions," says John Berry, a lawyer for the Council for Burley Tobacco of Lexington, Kentucky.

E The EPA stands by its report. "We've been hearing them for years," says spokesman Dave Ryan. "We think the suit is frivolous." Major medical groups also back the report. "This lawsuit is just another example of tobacco conglomerates blowing smoke in the faces of Americans," says Lonnie Bristow, chair of the American Medical Association's Board of Trustees. "An industry that kills 450,000 citizens every year cannot be trusted."

F The charge of scientific manipulation is unfounded, says Morton Lippmann, a lung expert from New York University who chaired an external review of the EPA report. The 90 per cent confidence limit is reasonable given the difficulties of studying second-hand smoke, he says, as was the omission of some recent studies. "You could wait forever for this study and the next study and the next study," he says. In fact, the additional studies they're so anxious to include couldn't possibly change the conclusion. The omitted study most often cited by the tobacco industry found a 30 per cent increase in the risk of lung cancer in passive smokers exposed to the highest levels of smoke. Lippmann also notes that the EPA report, while the most complete, is not the first study to conclude that passive smoking increases the risk of cancer.

G Anti-smoking groups think the suit is a desperate attempt to stop the inevitable. Athena Mueller of Action on Smoking and Health points out that more than 40 states now have at least some restrictions on smoking in public places. And if a bill now before California's senate is passed, smoking at work could for the first time be banned across an entire state. Mueller doubts if the tobacco industry's lawsuit holds water. "This is a scientific finding," she says. "You can no more sue the EPA for this than you could sue Einstein for the theory of relativity."

Đoạn A: Đáp án là iv. Đây là phần mở đầu cả bài văn, giới thiệu khái quát về hai bên tố tụng và thái độ chủ yếu của hai bên. Thông thường, đoạn thứ nhất được dùng làm thí dụ đưa ra đáp án. Thí sinh có thể tiện tay gạch bỏ thí dụ trong khung các lựa chọn để nâng cao tốc độ đọc.

Đoạn B: Đáp án là i. Đoạn này chỉ ra sự nguy hại của việc hút thuốc bị động trên một số phương diện: Việc hút thuốc bị động sẽ làm tăng xác suất mắc bệnh ung thư phổi, khói thuốc lá dẫn đến ung thư, việc hút thuốc bị động sẽ làm cho bệnh hen suyễn và các bệnh về đường hô hấp nặng hơn, làm cho trẻ em bị viêm tai. Tiêu đề thứ năm không toàn diện, không phải là tư tưởng trung tâm của cả đoạn, mà là một phần thông tin được truyền đạt trong đoạn này. Câu này nếu dùng cách "topic sentence" thì không ổn.

Đoạn C: Đáp án là viii. Shoddy và misleading là hai từ có giọng rất mạnh, là sự chỉ trích "gay gắt" bản báo cáo nghiên cứu của EPA. Sự chỉ trích này còn kèm theo căn cứ: Đặt chính trị lên trên khoa học, không đủ độ tin cậy; không đưa những kết quả nghiên cứu khác gây bất lợi cho kết luận vào trong bản báo cáo. Tư tưởng trung tâm của cả đoạn là phản bác bản báo cáo này, mà lựa chọn thứ tám đã thể hiện chính xác thái độ này. Chỉ dựa vào câu đầu hoặc câu cuối thì không thể hiểu chính xác thái độ này.

Đoạn D: Đáp án là vi. Đối với các công ty thuốc lá, bản báo cáo của EPA sẽ làm mất nguồn lợi của họ, do vậy bằng mọi giá phải ngăn chặn nó. Các công ty thuốc lá kiện EPA ra tòa, yêu cầu EPA tuyên bố bản báo cáo nghiên cứu vô hiệu, cũng tức là ngăn trở EPA.

Đoạn E: Đáp án là ii. Các câu "We think the suit is frivolous", "This lawsuit is ..." trong bài đã thể hiện cách nhìn của EPA đối với vụ kiện này.

Đoạn F: Đáp án là ix. Đoạn này có lẽ là đoạn khó nhất trong bảy đoạn. Các công ty thuốc lá cho rằng bản báo cáo của EPA thiếu tính khoa học. Còn EPA đáp lại rằng: "You could wait forever for this study and the next study and the next study," ý nghĩa là chỉ cần nghiên cứu việc hút thuốc bị động thì bản báo cáo nào cũng đều giống nhau, kết luận đều là việc hút thuốc bị động có hại cho sức khỏe. Tư tưởng diễn đạt trong lựa chọn thứ chín "A report as good as any" chính là "bản báo cáo nào cũng đều giống nhau". Câu này dựa vào cách "topic sentence" cũng không ổn. Thường là dựa vào các khả năng cơ bản về tiếng Anh: không những phải hiểu chính xác đoạn văn, mà còn phải biết ý nghĩa của "A report as good as any". Khi làm những câu như thế này không có đường tắt và bí quyết, phải đọc cả đoạn văn, hơn nữa phải có khả năng hiểu rất tốt.

Đoạn G: Đáp án là iii. Đoạn này nói về thái độ đối với vụ kiện này của một số đoàn thể phản đối việc hút thuốc. Tiêu đề thứ ba "Activists' opinion of the lawsuit" gần với tư tưởng này nhất.

Exercise 1

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

A Giant Step for Artificial Enzymes

1 Chemists in Britain have come a step nearer to building an "artificial enzyme" — a molecule which could speed up some reactions that are useful to industry.

2 Jeremy Sanders and his colleagues at the University of Cambridge have designed and synthesized a large cyclic "receptor" molecule, which makes one such reaction proceed almost 60,000 times as fast as usual. The receptor is similar to another built last year by the same team (*New Scientist, Science,* 1 February 1992). It consists of a ring of three porphyrin molecules linked by bridging chemical groups. Each porphyrin molecule contains a zincion at its centre. The central cavity of the new receptor is slightly smaller than before, and the researchers have also anchored pyridine groups to two of the zincions to act as bonding sites.

3 Sanders and his colleagues have used their receptor to speed up and control the products of the so-called Diels-Alder reaction, a mainstay of chemical synthesis. The reaction occurs between two molecules — a "diene", which has two carbon-carbon bonds separated by a single bond, and a diene-seeking molecule, or "dienophile". In the right conditions, these two molecules transfer the electrons involved in their double bonds from atom to atom to form new bonds that complete a ring of six carbon atoms with a single double bond. The creation of such six-membered rings is the crucial first step in making many pharmaceuticals and agrochemical.

4 Some Diels-Alder reactions are too slow to be useful industrially. The researchers, therefore, designed their receptor so that it would hold the diene and dienophile, via the pyridine (Py) groups, in the right positions to react quickly. According to Sanders, the receptor acts like a "molecular reaction vessel in which the effective concentration of reactants can be increased dramatically, so allowing a fast reaction".

5 Normally, Diels-Alder reactions produce a mixture of two products. But because in the receptor the reactants are forced into a specific orientation relative to each other, only one of the two possible products can form.

6 Sanders hopes to modify the receptor to bring together in the cavity two molecules that do not normally react. This could lead to be the synthesis of compounds which everyday synthetic chemistry cannot make.

7 The receptor differs from an enzyme or other catalyst in one important respect. Only a tiny amount of an enzyme is needed to make a reaction thousands of times faster, but large quantities of the receptor are needed to make a significant difference to the speed of a reaction. However, Sanders is confident that in the future his team will be able to increase the turnover or able to increase the turnover of reactants by designing new features into the receptor. This would reduce the amount of receptor needed to speed up a reaction by a given amount. The researchers report further details of their results in the latest issue of *Journal of the Chemical Society, Chemical Communications* (p. 458).

Questions 1-6

Match the following headings with appropriate paragraphs. Note there are more headings than paragraphs. The first has been done as an example.

A. British chemists' achievement (*example*)
B. The creation of six-membered rings
C. Products produced by Diels-Alder reactions
D. The large receptor molecule designed by British chemists
E. The drawback of the receptor
F. The Diels-Alder reaction
G. Fast reactions due to the receptor
H. Further efforts to be made on the receptor

Example: Answer:
Paragraph 1 *A*

1. Paragraph 2 ________
2. Paragraph 3 ________
3. Paragraph 4 ________
4. Paragraph 5 ________
5. Paragraph 6 ________
6. Paragraph 7 ________

Questions 7-9

7. How fast can the receptor molecule make reactions proceed?

____

8. What is the mainstay of chemical synthesis?

____

9. What is crucial to making many pharmaceuticals and agrochemicals?

____

Exercise 2

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 10 minutes.

Population Growth and Food Supply

1 About two thirds of the world's population live in what are loosely called "developing countries". Of course, strictly speaking, all countries are developing, but the term is used to describe those which are undeniably poor. Although the rich countries have only about 34% of the world's population, they earn about 90% of the world's income. They also possess about 90% of the world's financial resources, and more than 80% of the world's scientists and technicians. They produce 80% of the world's protein — including 70% of its meat — and they eat it.

2 Thanks to an impressive succession of agricultural revolutions, man's food-growing capacity is now hundreds of times larger than it was at the turn of the century, and we are now feeding more people than at any time in history. Nonetheless, the number of hungry and malnourished people is also larger than at any time in history. Admittedly, total food production has increased since 1961 in most parts of the world. Yet, per capita food production is little changed from the inadequate levels of the early 1960s. In short, world and regional production have barely kept up with population growth, as Fig. 1 shows.

3 There appear to be five food problems. First, there is the problem of quantity — of every human being getting enough calories to provide him with the energy to work and progress. Second, there is that of quality — of everyone getting enough protein, vitamins, and necessary minerals. Next, there is the matter of distribution: we have to find satisfactory ways of transporting, storing and issuing food. Then there is the problem of poverty: many

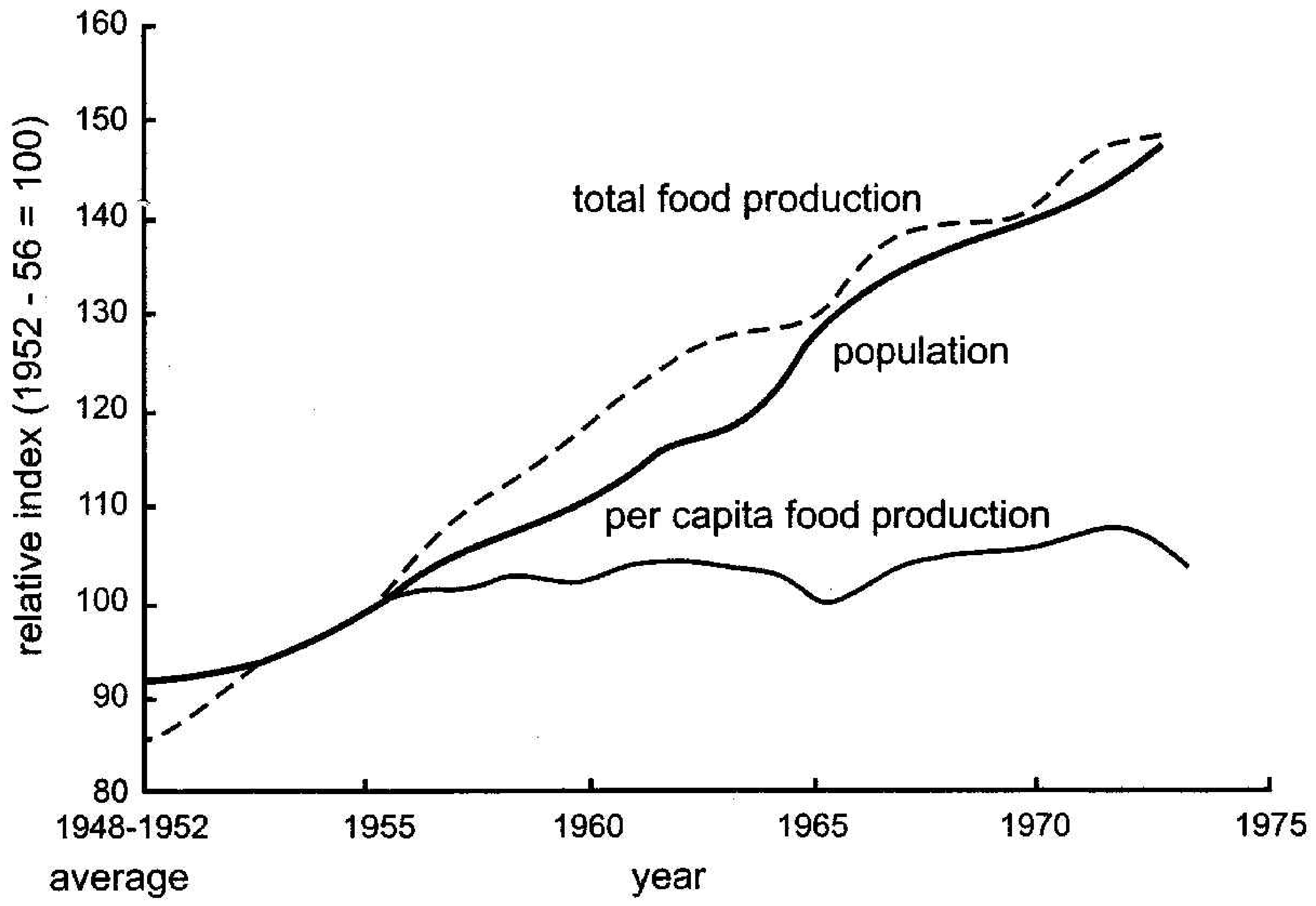


Fig. 1 World Population and Food Production

people in developing countries do not have money to buy food in sufficient quantity and of sufficient quality. And last, we must find ways of avoiding ecological side-effects. In other words, we must be able to grow enough food without further degrading our land, water and air.

4 A number of proposals have been made to improve food quantity and quality. An obvious and very necessary one is to limit population growth. Another is to increase the amount of land under cultivation by clearing forests and by irrigating arid land. Furthermore, the ocean (comprising 70% of the Earth's surface) is a potential source of more food, and there have been developments recently in the use of nonconventional proteins and synthetic foods. And last, various attempts are being made to increase the yield per hectare by developing or selecting new genetic hybrids of plants (the "Green Revolution"), by increasing the use of fertilizers, water, pesticides and herbicides, and by using modern agricultural and management techniques in poorer countries.

5 But the basic facts remain, which are that the world's population is increasing at a rate of about 3% p.a.. If food production can also be increased by 3% p.a., this will provide for human needs only at the present inadequate level. Something better is needed. Yet many countries are already failing to increase their rate of food production by 3% annually. The situation is particularly disturbing because population increase and inadequate food production are both worse in the very countries that are already short of food.

6 Are we, then, doomed to massive famines in coming decades? There is no easy answer to this controversial question. The introduction of new high-yield wheat and rice in parts of Asia and Africa since 1967 created a wave of optimism. But by 1973, bad weather plus a realization of the limitations of this increase in yield caused a return to pessimism. Some experts point out that we are already experiencing the greatest famine in the history of mankind, with somewhere between 5 and 20 million human beings dying from starvation, malnutrition and malnutrition-caused diseases each year. Half are children under five.

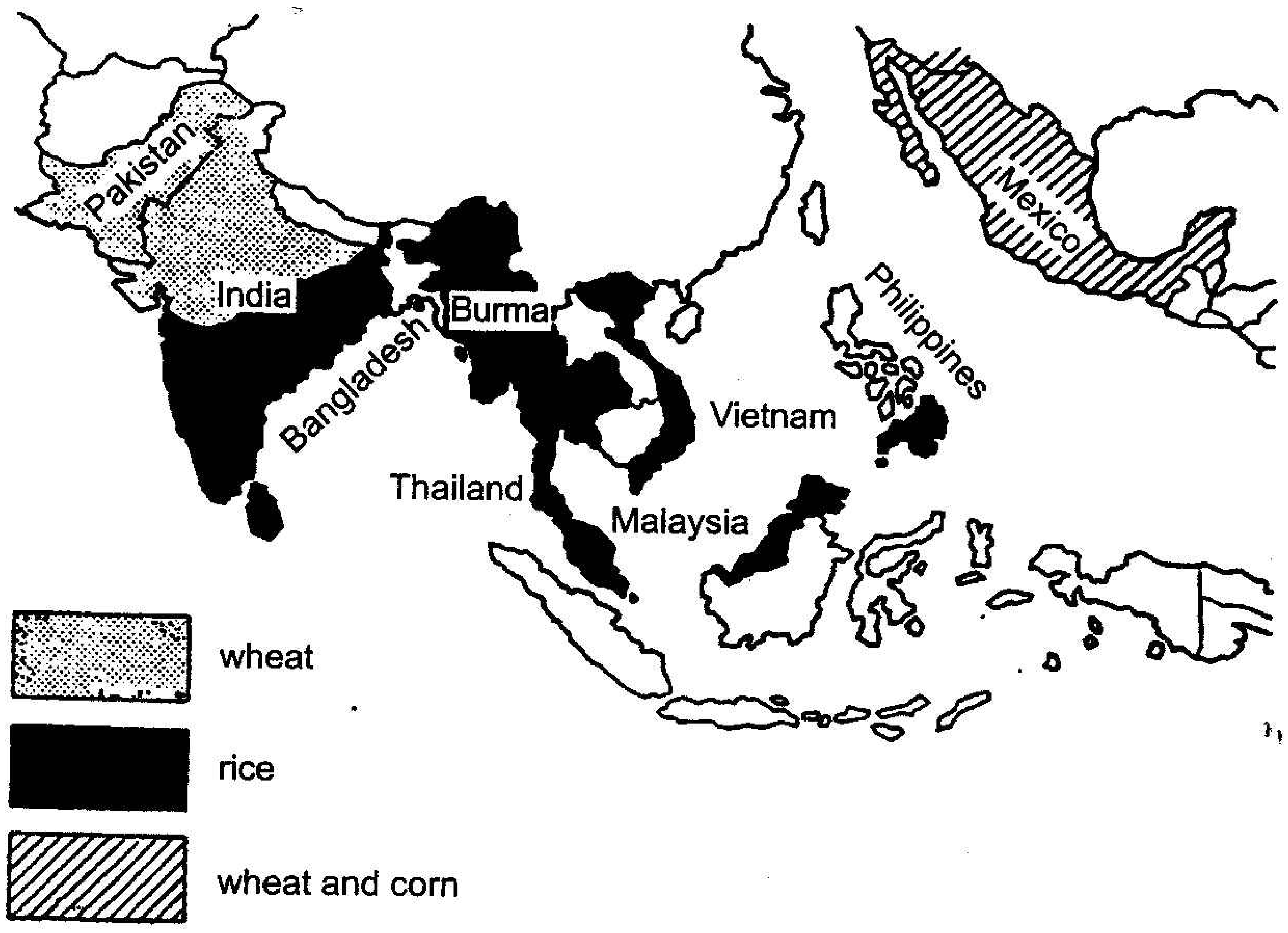

Pakistan
India
Bangladesh
Burma
Thailand
Vietnam
Malaysia
Philippines
Mexico
wheat
rice
wheat and corn

Fig. 2 Green Revolution Countries

Questions 1-6

Choose a suitable heading for each paragraph of the passage from the list below. Note there are more headings than paragraphs.

1. Paragraph 1 ____________
2. Paragraph 2 ____________
3. Paragraph 3 ____________
4. Paragraph 4 ____________
5. Paragraph 5 ____________
6. Paragraph 6 ____________

A. Food production must grow faster
B. Developing countries vs. rich countries
C. The Green Revolution
D. Avoiding ecological side-effects
E. Increasing the yield per hectare
F. What's our future?
G. Food problems
H. Food production growth vs. population growth
I. Consumption of resources in rich countries
J. Improving quantity and quality

Questions 7-10

7. Choose a suitable title for the passage from the list below by circling an appropriate letter.
   A. Improve Food Quantity and Quality
   B. Feeding the World
   C. Problems Concerning Food Production
   D. The Success of the Green Revolution

8. When was the per capita food production the highest? ________

9. Name two food problems.

   ____________________ ____________________

10. Name two attempts made to increase the yield per hectare.

   ____________________ ____________________

Questions 11-13

Name one country that has had a "Green Revolution" in the following crop(s):

11. wheat ______________________________

12. rice ______________________________

13. wheat and corn ______________________________

Exercise 3

In this exercise, you will read a passage and answer the questions that precede the passage. The suggested time for reading the passage and answering the questions is 10 minutes.

Questions 1-6

The following reading passage has seven paragraphs A-G. Choose the most suitable headings for paragraphs B-G from the list of headings below. Write the appropriate numbers (i-ix) in the spaces provided.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

	List of Headings
(i)	The spreading tea
(ii)	The history of tea growing
(iii)	Changes of tastes for drinks
(iv)	Reducing cancer risks
(v)	The plant *Camellia sinensis*
(vi)	A woman's opinion of tea
(vii)	Where to find it
(viii)	Japanese tea
(ix)	More varieties to choose from

Example:	Answer:
Paragraph A	*iii*

1. Paragraph B ________
2. Paragraph C ________
3. Paragraph D ________
4. Paragraph E ________
5. Paragraph F ________
6. Paragraph G ________

More Than Sympathy

Tea now brews up health benefits and gourmet appeal

A Americans are far more sophisticated about beverages than they were 20 years ago. Witness the Starbucks revolution and you'll know where the trend goes. Now, spurred on by recent studies suggesting that it can cut the risk of cancer and heart disease and retard the aging process, tea is enjoying a similar jolt. Enough chic tea salons are springing up to make even die-hard coffee drinkers consider switching beverages.

B Tea is available in more places than ever. "Tea was one of the most prolific beverage categories in 1999," with 24 per cent more products offered over the previous year, reports Tom Vierhile of Marketing Intelligence Service, which tracks food and beverage trends. And the Tea Association of the United States reports that from 1990 to 1999, annual sales of the drink grew to $4.6 billion from $1.8 billion. "Green tea is seen by consumers as a 'functional food' — delivering health benefits beyond sustenance," says Vierhile.

C Recently published studies point out that not all brews are created equal. Only teas that come from the leaves of the plant *Camellia sinensis* — which, in their raw state are brewed to make green tea, and, with curing, can be turned into oolong and black tea leaves — have been shown to contain health benefits. Other herbal teas and infusions may taste good, yet they do little more than warm up the drinker. But for *Camellia sinensis*, the evidence is powerful. In a 1998 study, Harvard University researchers found that drinking one cup of black tea a day lowered the risk of heart attack by as much as 44 per cent compared with non-tea drinkers, and other studies have suggested that the antioxidants in these so-called real teas can also prevent cancer.

D One such antioxidant in green tea is ECGC, a compound 20 times as powerful as vitamin E and 200 times as powerful as vitamin C. "When people ask me for something good and cheap they can do to reduce their cancer risk, I tell them drink real tea," says Mitchell Gaynor, director of medical oncology at New York City's Strang-Cornell Cancer Prevention Center.

E Among those inspired to become a green-tea drinker is Tess Ghilaga, a New York writer who took it up after consulting a nutritionist six years ago. "I've never been a coffee drinker," says Ghilaga, 33. "She told me to start drinking green tea for the antioxidant properties." Now Ghilaga and her husband routinely brew tea — they order theirs from InPursuitofTea.com, an Internet tea company. And although tea contains about half the amount of caffeine in a cup of coffee, "you still get a nice buzz from it," says Ghilaga.

F Restaurants and coffee bars are also getting in on the act. "In restaurants nowadays, you're a lot less likely to be offered a pitcher of hot water and a tea bag if you order tea after a meal," says Sebastian Beckwith of InPursuitofTea.com. At a Los Angeles coffee bar Urth Caffé, customers can select from 65 varieties of tea, coming from countries as diverse as China, Japan, India, and Iran, and enjoy a pot of tea for about the price of a gourmet coffee — $2.50 for a small pot and $3.50 for a large. "The tea experience is the exact opposite of the coffee experience," says Urth Caffé co-founder Shallom Berkman, explaining the beverage's newfound popularity. "Coffee jars you with its caffeine; tea is more nurturing and soothing, and people seem to be looking for that now." That could add up to lots of green for those who make their living in tea.

G www.alitea.com. Along with green, black, and oolong teas, this company sells a wide variety of herbal teas — and offers a "Tea of the Month" club.

www.teasofgreen.com. This site sells higher-end green, black, and oolong teas and has good tips on proper storage and preparation of tea.

www.tea.com. Tea drinkers can find links to sites offering tea lore, such as articles about tea ceremonies in foreign lands. An exhaustive "frequently asked questions" file rounds out the site.

Exercise 4

In this exercise, you will read a passage and answer the questions that accompany the passage. Some of the questions will come before the passage; others will come after the passage. The suggested time for reading the passage and answering the questions is 20 minutes.

Questions 1-8

The following reading passage has nine paragraphs A-I. Choose the most suitable headings for paragraphs B-I from the list of headings below. Write the appropriate numbers (i-x) in the spaces provided.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i) Fuels from biological sources
(ii) Research and development into biomass systems
(iii) Solar energy and its utilization
(iv) The energy crisis and photosynthetic systems
(v) The second energy crisis
(vi) Plant power
(vii) Efficiency of the solar conversion process
(viii) Tree biomass
(ix) Other forms of renewable energy
(x) Liquid and gaseous fuels from biomass

Example:	Answer:
Paragraph A	*iii*

1. Paragraph B ________
2. Paragraph C ________
3. Paragraph D ________
4. Paragraph E ________
5. Paragraph F ________
6. Paragraph G ________
7. Paragraph H ________
8. Paragraph I ________

Energy from Biological Sources

A Radiation from the sun is the earth's primary source of energy. More than 99 per cent of the processes that are happening on earth are energized by the sun either directly or indirectly. As solar radiation is a permanent and renewable source of energy, why, then, do we have an "energy crisis"? The problem, of course, lies in how to utilize this energy. It is diffuse and intermittent on a daily and seasonal basis, thus collection and storage costs can be high. But we already have at our disposal a means of capturing and storing a proportion of this energy, and we have always had such a means. It is plant life — the "biomass". The process involved is photosynthesis.

B This capture of solar energy and conversion into a stored product occurs, with only a low overall efficiency of about 0.1 per cent on a world-wide basis but because of the adaptability of plants, it takes place and can be used over most of the earth.

C We should remember two things about this energy source. First, the world's present and precarious dependence on fossil fuels — first coal, and then oil — is only about two hundred years old. Before that, most of the energy required by human beings for heating, cooking and industrial purpose was supplied from biological sources. By this, we mean mainly wood, or its derivative, charcoal. Secondly, wood still accounts for one sixth of the world's fuel supply. In the non-OPEC developing countries, which contain 40 per cent of the world's population, non-commercial fuel often comprises up to 90 per cent of their total energy use. With the increasingly doubtful future of fossil fuel supplies, fuel from biological sources may have to become even more important.

D Traditional fuels of biological origin include wood, charcoal, agricultural residues such as straw and dried animal dung. With the growth in world population, there has been increasing pressure on these resources, leading to what is sometimes called the "second energy crisis". This is more drastic for mankind than the "first", or oil crisis. It takes the form of deforestation, with loss of green cover in hot lands, leading to desiccation and the loss of fertile land to desert.

E The threat from both energy crises can be partly met by utilizing the enormous supply of energy built up annually in green plants. The question is, how should this be done? In the past, photosynthesis has given us food, fuel wood, fibre and chemicals. It has also, ultimately, given us the fossil fuels — coal, oil and natural gas, but these are not renewable while the other products are. Recently, however, with abundant oil, the products of present-day photosynthesis are mainly evident to the developed world as food. We should re-examine and, if possible, re-employ the previous systems; but, with today's increased population and standard of living, we cannot revert to old technology and must instead develop new means of using present-day photosynthetic systems more efficiently.

F Fortunately for us, plants are very adaptable and exist in great diversity — they could thus continue indefinitely to supply us with renewable quantities of food, fibre, fuel and chemicals. If the impending fuel problem which is predicted within the next ten to fifteen years comes about, we may turn to plant products sooner than we expect. Let us be prepared!

G Some basic research can be done centrally, without reference to the conditions in any one country. For example, all plant energy storage depends ultimately on the process of photosynthesis. Experiments are being made to see whether this process can either be speeded up, or even reproduced artificially, in order to produce a higher efficiency in energy extraction. Most research should be done locally, however, because of climatic and vegetation differences, and also because of the difference in needs and emphasis in varying countries. Such research and development is an excellent opportunity to encourage local scientists, engineers and administrators in one field of energy supply. Even if biomass systems do not become significant suppliers of energy in a specific country in the future, the spin-off in terms of benefits to agriculture, forestry, land use patterns and bioconversion technology is certain to be valuable.

H What are the methods currently in use or under trial for deriving energy from biomass? The first is the traditional use outlined in paragraph C, which may be termed the "non-commercial" use of biomass energy. The second also has a long traditional history: the use of wood-fuel under boilers to generate steam. This has now been revised on an intensive scale. In a study from the Philippines, it has been estimated that a 9,100 hectare fuel wood plantation "would supply the needs of a 75 megawatt steam power station if it were not more than fifty kilometres distant". Such a plantation would use a species of fast-growing tree — leucaena leucocephala, or the giant "ipil-ipil". The investment requirements and cost of power produced looks favourable and competitive with oil-fired power stations of similar capacity. In addition, residues from cropland after harvest and from sawmills could be used as steam-producing fuel. The steam could then be used to generate electricity.

I There are also bioconversion processes to produce liquid fuels such as oil and alcohol. Some fuel oils can be pressed directly from certain crops. Alcohols, on the other hand, can be produced by converting plant material by fermentation. Ethanol (ethyl alcohol) can be extracted from growing plants such as sugar cane, from waste plant material, or from whole grain. Methanol (methyl alcohol) can be produced from coal, wood, sewage and various waste products. These alcohols have several industrial uses and can also be used as fuels in the internal combustion engines of vehicles. Technology is already advanced, and the main problem is devising ways of collecting enough organic material to make the installations commercially viable. Some crops can be grown specifically for this purpose. In other cases, the installations can make use of the residue, or "trash" produced in the large-scale plantation farming of such crops as sugar cane and pineapple. Another fuel product produced by a fermentation process is fuel gas of various kinds, including a biogas called methane. Several of these processes can be applied to household or municipal wastes and refuse — a large and concentrated source in all big towns and cities.

Questions 9-15

Decide if each of the following statements is true or false according to the information provided in the passage. If a statement is true, write T; if it is false, write F.

9. Practically all the plant biomass produced by farmers around the world is a potential source of energy, whether the crop is grown for food, fuel or fibre.
10. Sugar cane is an important crop that can be used to produce ethanol for motor fuel.

11. Only developing countries that have large areas of agricultural or forest land can benefit from biomass sources of energy.

12. The use of charcoal for cooking has been a common practice for hundreds of years.

13. Systematic deforestation to supply steam-producing fuel serves to improve the fertility of the land and reduce desiccation.

14. OPEC countries use more fuel from non-fossil biological sources than the developing world in general.

15. Traditional use of biomass material for fuel caused no serious problems when population levels were low.

Exercise 5

In this exercise, you will read a passage and answer the questions that accompany the passage. The suggested time for reading the passage and answering the questions is 15 minutes.

Questions 1-11

The reading passage has twelve paragraphs A-L. Choose the most suitable headings for paragraphs B-L from the list of headings below. Write the appropriate numbers (i-xiv) in the spaces provided.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i) Proteins might play a part in anaesthesia
(ii) How to measure a protein's destabilization
(iii) A hypothesis held before the 1980s
(iv) Findings made by Dr. Eckenhoff
(v) Different potency of isofluranes' two varieties
(vi) The proteins have albumin-like qualities
(vii) Shapes of proteins
(viii) How anaesthesia works — still a puzzle

(ix) The two evidences showing the proteins' albumin-like quality
(x) Effect of the two variables on proteins
(xi) Anaesthetics and insomnia
(xii) Two conflicting theories
(xiii) Dr. Eckenhoff's theory
(xiv) Ill effects of anaesthesia

Example:	Answer:
Paragraph A	*viii*

1. Paragraph B ________
2. Paragraph C ________
3. Paragraph D ________
4. Paragraph E ________
5. Paragraph F ________
6. Paragraph G ________
7. Paragraph H ________
8. Paragraph I ________
9. Paragraph J ________
10. Paragraph K ________
11. Paragraph L ________

Sleeping Secrets

A In 1846, a Bostonian dentist called William Morton removed a tumour from the neck of a newspaper printer to whom he had administered ether. The printer felt no pain. Ever since then, doctors have been trying to fathom exactly what causes the curious state of unconsciousness, now known as anaesthesia, into which he lapsed.

B For a long time, researchers in the field believed that anaesthetics worked by dissolving in the fatty sheaths that insulate nerves. This, it was theorized, caused them to interfere with the electrical signals that pass along those nerves. Since one of the few things that anaesthetic chemicals seemed to have in common was a tendency to dissolve in fats, and their solubility was related to their effectiveness, that hypothesis looked good until the suggested electrical effects were measured in the 1980s and discovered to be too small.

C At around that time, however, another idea was becoming popular. This was that anaesthetics combine with critical proteins in the central nervous system and bring them — and consciousness — grinding to a halt. Subsequent research has shown that anaesthetics can, indeed, bind to protein molecules, and can sometimes affect their function as a result. But nobody has yet identified the elusive proteins involved in anaesthesia. In October, however, Roderic Eckenhoff, an anaesthesiologist at the University of Pennsylvania, will publish a paper that may bring that identification closer. Though he has not found the guilty proteins, he thinks he knows something important about their characteristics, and thus how anaesthetics perform their trick.

D Proteins consist of long chains of chemical links known as amino acids. These chains, however, are usually folded up into more or less globular shapes which are held steady by weak chemical bonds between adjacent parts of the chain.

E Since the shape of a protein is critical to its function (particularly if it has a precisely sculpted docking port for other molecules to enter), Dr. Eckenhoff suspected that anaesthetics work by changing the stability of the folding of a particular protein, thus affecting how well that protein does its job. Anaesthetics might achieve this either by making the shape of a protein so stable that it cannot flex in response to docking and undocking molecules, or so unstable that the docking port loses its shape. The test of this theory, to be published in October's *Molecular Pharmacology*, looked at two proteins (albumin and myoglobin) which have nothing directly to do with anaesthesia, but which are easy to extract in large quantities for experiments.

F Dr. Eckenhoff's previous work has shown that when an anaesthetic molecule such as isoflurane binds to albumin (a component of blood), the protein becomes more settled in its folded pattern. This means that anaesthetics are less likely to stick to it if it is destabilized. By contrast he showed that myoglobin (a component of muscle) opens up and becomes less stable when it hosts a molecule of isoflurane — which means that anaesthetics are more likely to stick to it if it is destabilized.

G Since it is one of the characteristics of anaesthesia that its effectiveness weakens with temperature and pressure, Dr. Eckenhoff wanted to examine the effects of these two variables on the proteins in question. Raising the temperature destabilized both proteins (no great surprise, given that molecules, shake more when they are hotter). So did increasing the pressure. But Dr. Eckenhoff was able to measure the precise amount of destabilization by carrying the experiments out in water containing a radioactive form of hydrogen called tritium.

H In the normal course of events, a protein molecule will swap hydrogen atoms with the surrounding water from time to time — and if that molecule has been partially unfolded, there will be more hydrogen available to swap, since atoms on the inside as well as the outside of the globule will be available for exchange. The extent to which a protein has been destabilized can, therefore, be measured by how radioactive it becomes in a given period of time.

I The stability curves for an albumin at different temperatures and pressures turn out to have the same sort of shape as the curves for the effectiveness of anaesthetics (those of myoglobin do not match at all). And two other lines of evidence from the paper also indicate that the proteins involved in anaesthesia have albumin-like qualities.

J One is that only albumin responds to changes in the concentration of isoflurane in the way that would be predicted if it were acting like a protein responding to anaesthesia. The other is the response of albumin to different forms of isoflurane.

K The isoflurane molecule comes in two varieties, which are mirror images of each other. For most chemical purposes the varieties are identical, but anaesthesia can tell the difference — and one is more potent than the other. Dr. Eckenhoff has found that the more potent variety binds more strongly to albumin, but not to myoglobin.

L Anaesthesia, therefore, seems to work by stabilizing rather than destabilizing critical proteins. But which ones? The most likely candidates are the protein receptors of the small chemical messengers (known as neurotransmitters) which carry signals from one nerve cell to another at special sites called synapses. Work on glutamate receptors, which are responsible for simulating the brain, suggests that these are, indeed, inhibited by anaesthetics. But in contrast to this, John Mihic of the University of Colorado and his colleagues have recently made a case for anaesthetics working by increasing rather than decreasing the effects of receptor molecules — in this case the receptors for GABA and glycine, two neurotransmitters that calm down excited synapses. How that fits in with the Eckenhoff model remains to be seen. Clearly, however, anaesthesia has not given up all of its secrets yet.

Exercise 6

In this exercise, you will read a passage and answer the questions that accompany the passage. The suggested time for reading the passage and answering the questions is 15 minutes.

Questions 1-10

The reading passage has eleven paragraphs A-K. Choose the most suitable headings for paragraphs B-K from the list of headings below. Write the appropriate numbers (i-xiv) in the spaces provided.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i) Commercial companies have cashed in
(ii) A business coveted by commercial companies
(iii) A new regulation enforced by European weathermen
(iv) A profitable market
(v) Complaints made by private companies
(vi) Commercial companies enjoyed unfair advantages
(vii) Value brought by accurate forecasts
(viii) How scientists get accurate forecasts
(ix) The situation will be changed soon
(x) Improved weather forecasts
(xi) The history of weather forecasting
(xii) How people avoid complying with the rule
(xiii) Damages caused by the hurricane
(xiv) Little profit made from a profitable market

Example: Answer:
Paragraph A *iv*

1. Paragraph B ____________
2. Paragraph C ____________
3. Paragraph D ____________
4. Paragraph E ____________
5. Paragraph F ____________
6. Paragraph G ____________
7. Paragraph H ____________
8. Paragraph I ____________
9. Paragraph J ____________
10. Paragraph K ____________

It Never Rains

A Weather forecasts on Hurricane Floyd, which has just hit North Carolina, persuaded state governors along the southeastern seaboard to urge more than 2 million people to evacuate inland. Since 1854, when state-sponsored meteorology was born, weather forecasting has always been recognized as a valuable business — one dollar invested in meteorology is said to yield about $15 in terms of casualties avoided, harvests saved and so on. But now that the

Internet has made selling weather information so easy, the market is being fought over as never before.

B Weather forecasts have become much more accurate over the past 20 years. Today's three-day forecasts are as good as one-day forecasts were in 1981. Ten-day forecasts are fast becoming the standard.

C The more accurate the forecasts, the more they are worth. Sales of iced tea multiply by five each time the thermometer rises above 15°C. With a three-day forecast, retailers can send their orders to their sunniest outlets and soft-drinks companies can adjust their rate of production. Movie audiences, medicine consumption and toll receipts all vary according to the sky. In winter, power companies can save up to $100,000 a day if they know in advance how high users will turn up their heating.

D Throughout most of its history, weather forecasting has been done by national governments, although, since any rain forecast for London incorporates data collected from as far away as Fiji, they have to cooperate. The World Meteorological Organization (WMO), part of the United Nations, organizes the free exchange of data among 185 member states. But the more accurate — and therefore valuable — the weather forecasts become, the more commercial companies want to get into the business.

E By some estimate, Europe's weather forecasting market is currently worth $150m and it may soon be worth $700m. The state-owned weather forecasters are keen to cash in, but they remain heavily dependent on their governments. Britain's meteorological office earns more in commercial revenues than any of its European counterparts, but it brings in only £24m of its £155m budget.

F One reason is that commercial companies have been taking an increasing slice of the weather business in Europe. Over the past five years, global companies, such as Japan's Weathernews, or national forecaster, such as the Netherlands' Meteo Consult, have captured 20% of the market from government weather services. Accuweather, an American company, has been courting European media, businessmen, mariners and mountain-climbing fanatics.

G Europe's state-owned weather services complain that the commercial companies have unfair advantages. Unlike them, the American Weather Service — which, according to the rules that govern it, is not allowed to sell information — passes on without charge the data it receives from the WMO to private companies. Thus, private forecaster can stock up on free American data and resell it to other markets without investing in costly satellites or supercomputers.

H In 1995, European weathermen, supported by the South Americans, made the WMO adopt a new rule — Regulation 40 — that identifies two categories of products. Raw data needed by meteorologists all over the world remain at everybody's disposal. But weather services may not sell the data that have the greatest economic value — forecasts for a particular city, for instance — outside their national markets.

I So naturally everybody sets about circumventing Regulation 40. Universities, which still enjoy free access to all weather data, are under suspicion, but the main way around the rules is to use the Internet, where the notion of national markets, used by Regulation 40, simply does not apply.

J Private companies have also complained about government weather services to the European Commission, claiming that the absence of competition between them proves collusion. And they say that those services dump weather data. In France, for example, the government weather service, Meteo France, gets FFr 2m a year from selling forecasts to TF1, the biggest commercial television station. TF1, meanwhile, gets FFr 1.7 billion in revenue from advertising spots around the weather report.

K So far, the commission has turned a deaf ear and the WMO has managed to persuade its members to take a united stand. Too much competition from the private sector would jeopardize the free exchange of data that allows any country to formulate forecasts. But the amounts at stake may soon change this.

Exercise 7

In this exercise, you will read a passage and then answer the questions that accompany the passage. The suggested time for reading the passage and answering the questions is 20 minutes.

Farmers Harvest the Wind

A Some farmers and ranchers in the United States are raising a new cash crop: electricity. They have discovered that they own not only land but also the wind rights that go with that land.

B A farmer in Iowa who leases a quarter acre of cropland to the local utility as a site for a wind turbine can typically earn $2,000 a year in royalties from the electricity produced. In a good year, that same plot can produce $100 worth of corn. Wind turbines strung across the farm at appropriate intervals can provide a welcome boost to farm income, yielding a year-round cash flow.

C Harnessing the wind has become increasingly profitable. The American Wind Energy Association reports that the cost per kilowatt-hour of wind-generated electricity has fallen from 38¢ to 3¢ - 6¢ in 2000, depending primarily on wind speed at the site. Already competitive with other sources, the cost of wind-generated electricity is expected to continue to decline. These falling costs, facilitated by advances in wind turbine design, help explain why wind power is expanding rapidly beyond its original stronghold in California.

D As wind farms have come online in farming and ranching states such as Minnesota, Iowa, Texas, and Wyoming, wind electric generation has soared, pushing US wind-generating capacity from 1,928 megawatts in 1998 to 2,490 megawatts in 1999 — a gain of 29%. Contrary to public perceptions, the potential of wind power is enormous. A US Department of Energy wind resource inventory found that three states — North Dakota, Kansas, and Texas — have enough harnessable wind energy to meet the electricity needs for the whole country.

E In the Great Plains, where an acre of rangeland produces only $20 worth of beef a year or where an acre in wheat may yield $120 worth of grain, the attraction of wind power is obvious. For ranchers with prime wind sites, income from wind could easily exceed that from cattle sales. And the turbines scattered across a farm or ranch do not interfere with the use of the land for farming or cattle grazing.

F Another attraction is that much of the income generated stays in the local community, since a single large wind turbine can generate $100,000 or more worth of electricity per year, harnessing local wind energy can revitalize rural communities.

G Many state governments are taking the initiative. Minnesota is requiring its largest utility to install 425 megawatts of wind-generating capacity by 2002. In Texas, the legislature has set a goal of 2,000 megawatts of generating capacity from renewable sources by 2009, with most of it expected to come from the state's abundant wind power. In Colorado, offering a wind power option to both residential and business electricity users has led to the installation of 20 megawatts of wind-generating capacity — an amount expected to double soon.

H And it is not only the wind farms themselves that provide income, jobs, and tax revenue. The first utility-scale wind turbine manufacturing facility to be built outside of California has recently started operation in Champaign, Illinois, in the heart of the Corn Belt.

I Agricultural land values may soon reflect this new source of income. The wind meteorologist who identifies the best sites for turbines is playing a role in the emerging new energy economy comparable to that of the petroleum geologist in the old energy economy. The mere sight of a wind meteorologist installing wind-measuring instruments in a community could raise land prices.

J Satisfying the local demand for electricity from wind is not the end of the story. Cheap electricity produced from wind can be used to electrolyse water, producing hydrogen, now widely viewed as the fuel of the future. With automobiles powered by fuel cell engines expected on the market within a few years and with hydrogen as the fuel of choice for these new engines, a huge new market is opening up. Royal Dutch Shell, a leader in this area, is already starting to open hydrogen stations in Europe. William Ford, CEO of the Ford Motor Company, has said he expects to preside over the demise of the internal combustion engine.

K US "wind farmers" are part of a fast-growing global trend in the use of wind energy. Worldwide, wind electric generation in 1999 expanded by a staggering 39%. Wind already supplies 10% of Denmark's electricity. Spain's northern industrial province of Navarra gets 23% of its electricity from wind, up from zero just four years ago. In China, which recently brought its first wind farm online in Inner Mongolia, wind analysts estimate that the country's wind potential is sufficient to double national electricity generation.

L In Denmark, Germany, and the Netherlands, individual farmers are investing in the turbines themselves and selling the electricity to the local utilities, thus boosting the farmers' share of income from wind power.

Questions 1-6

From the list of headings choose the most suitable headings for paragraphs B-G. Write the appropriate numbers (i-ix) in boxes 1-6 on your answer sheet. Paragraph A has been done as an example.

NB *There are more headings than paragraphs so you will not use all of them. You may use any heading more than once.*

List of Headings

(i) Declining costs of wind power
(ii) State governments are taking action
(iii) Farm income increased
(iv) Large wind resource in US
(v) A new cash crop
(vi) A boost to rural economy
(vii) Land value raised
(viii) Extra income
(ix) Wide use of wind power

Example:	Answer:
Paragraph A	*v*

1. Paragraph B _______
2. Paragraph C _______
3. Paragraph D _______
4. Paragraph E _______
5. Paragraph F _______
6. Paragraph G _______

Exercise 8

In this exercise, you will read a passage and answer the questions that accompany the passage. The suggested time for reading the passage and answering the questions is 20 minutes.

Questions 1-7

The reading passage has ten paragraphs A-J. From the list of headings below choose the most suitable headings for paragraphs B-H. Write the appropriate numbers (i-x) in boxes 1-7 on your answer sheet.

List of Headings

(i) A reversed process
(ii) Extinctions due to infectious diseases
(iii) Biologists' big concern — the health of birds
(iv) Reduced habitat
(v) Unknown causes
(vi) Threat to biodiversity and human health
(vii) The major cause of new wildlife diseases
(viii) The humans' fault
(ix) Infectious diseases on the rise
(x) West Nile Fever.

Example:	Answer:
Paragraph A	*iii*

1. Paragraph B ________
2. Paragraph C ________
3. Paragraph D ________
4. Paragraph E ________
5. Paragraph F ________
6. Paragraph G ________
7. Paragraph H ________

Germs and Sickness in a Shrinking World

A Bird-watchers aren't the only ones keeping close tabs on feathered migrants this spring. Public-health officials, fearing a resurgence of the imported virus that gave both birds and people West Nile Fever last summer, are scanning the skies for signs of avian ill health. But biologists warn that sickly birds, beyond being harbingers of human disease, warrant concern in their own right. Last year's West Nile outbreak, which killed seven elderly people, also felled 5,000 to 10,000 native birds — mostly crows but 19 species in all, including robins, blue jays, herons, hawks, and kingfishers.

B That's not surprising. Just as measles and smallpox carried to the New World by Spanish conquistadors took a devastating toll on Native Americans who had never been exposed to the germs, transporting domestic and wild animals from one place to another introduces native creatures to new, and often deadly, infectious diseases. As globalization shuffles more people, animals, and pathogen-contaminated products around the world, biologists say such infections are increasing. According to Peter Daszek of the University of Georgia's Institute of Ecology in Athens, "There is probably no place on Earth that is free from pathogen pollution."

C In a report published last winter in *Science*, Daszek documents dozens of "emerging" wildlife diseases — from elk stricken with bovine tuberculosis to Antarctic penguins who show signs of exposure to a chicken virus. He believes such diseases pose a significant, yet largely unrecognized, threat to global biodiversity. And the spread of some wildlife infections also endangers human health. In last week's *Science*, researchers warn that seals just discovered to be infected with influenza B could spawn a new flu epidemic among humans.

D Like predators, pathogens are natural components of ecosystems that help regulate wildlife populations. But humans cook up host-pathogen combinations that could never occur in nature. One early example was the introduction of cattle to Africa in the late 1800s, which sparked an epidemic of a virus called rinderpest among native buffalo, wildebeest, and other grazers. So many of these animals died that large swaths of natural savanna turned into scrubby forest.

E Indeed, spillover of pathogens from domestic livestock and pets may be the leading cause of emerging wildlife diseases, especially as humans encroach increasingly on wild-animal habitat. In the western United States, the black-footed ferret was nearly wiped out by distemper, a deadly viral disease of domestic dogs. African wild dogs in the Serengeti did die out after exposure to canine distemper. Today Africa's endangered mountain gorillas are threatened by several diseases, from measles to the common cold, that they catch directly from human tourists.

F Sometimes, this process reverses itself in what Daszek calls "spill back". A disease known as brucellosis, for example, was probably introduced to North America along with cattle. But infected bison roaming Yellowstone National Park are now considered a threat to livestock, and are often shot by ranchers when they wander outside park boundaries.

G Destroying habitat is another way humans spawn disease outbreaks. The loss of US wetlands has crowded ducks, geese, and other waterfowl into smaller bodies of water, sparking epidemics of cholera and botulism that kill tens of thousands of birds at a time. According to Robert McLean, director of the US Geological Survey National Wildlife Health Center, "Shrinking habitat is also deteriorating, which promotes growth of bacteria and other pathogens."

H Occasionally, the culprit behind an emerging wildlife illness is a mystery. In 1998, biologists identified a new fungal disease that was killing huge numbers of frogs in remote upland rain forests of Australia and Central America. Since then, the same fungus has been fingered in die-offs of boreal toads in the Colorado Rockies. But even in these cases, Daszek suspects people are ultimately to blame. One possibility is that global warming, which has increased the number of dry days in tropical cloud forests, concentrated water-loving frogs in too small a habitat, sparking disease outbreaks similar to those rampant among waterfowl.

I Whatever the cause, biologists are seriously worried about massive frog die-offs, as well as the threat infectious diseases pose to biodiversity as a whole. Though scientists only recently began considering the possibility, disease is now thought to have played a role in many previous extinctions, including the disappearance of several Hawaiian birds, the passenger pigeon, and even woolly mammoths. Recently, researchers documented the first proven "extinction by infection" when the last of a species of Polynesian tree snail was killed by a parasitic disease.

J The human species has its own welfare to worry about as well. Many wildlife diseases — from plague and flu to emerging infections like Ebola, hantavirus, and West Nile Fever — also infect people. That's a sobering thought as mosquitoes and birds set off on their springtime migrations.

Exercise 9

In this exercise, you will read a passage and then answer the questions that accompany the passage. The suggested time for reading the passage and answering the questions is 20 minutes.

Questions 1-11

The following reading passage has twelve paragraphs A-L. Choose the most suitable headings for paragraphs B-L from the list of headings below. Write the appropriate numbers (i-xiv) in the spaces provided.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i) What else is needed to fly
(ii) Hang gliders' German origin
(iii) Unpowered flying — a flight fancy?
(iv) World competitions of hang glider flying
(v) The function of battens
(vi) Safer than balloons and airplanes
(vii) Training of hang glider fliers
(viii) The British test
(ix) Flying a hang glider
(x) What to do in case of emergency
(xi) Hang gliders can fly hundreds of miles
(xii) Development of hang gliders in America
(xiii) Testing systems to ensure safety
(xiv) The structure of hang gliders

Example:	Answer:
Paragraph A	*iii*

1. Paragraph B __________
2. Paragraph C __________
3. Paragraph D __________
4. Paragraph E __________
5. Paragraph F __________
6. Paragraph G __________
7. Paragraph H __________
8. Paragraph I __________
9. Paragraph J __________
10. Paragraph K __________
11. Paragraph L __________

On the Wing

Hang gliding has come a long way since participants flew a few hundred feet from the top of a hill to the bottom, and were lucky to finish up in one piece.

A Suppose a friend told you he had just spent $4,000 on a new hang glider weighing a mere 601b (27 kilos) which he could transport on top of his car and carry on his shoulder. Would you believe his plan to fly scores of miles without an engine? A flight of fancy? Not at all, he would explain. Hang gliding no longer deserves its reputation as a sport for reckless idiots who get a thrill risking life and limb by leaping off cliffs and mountains.

B Accidents still happen, but they are usually caused by pilot error. Equipment failure is rare and most mishaps result in nothing more than a bit of bent aluminium and a bruised ego. *Hang Gliding*, a magazine for American enthusiasts, reckons that for every 100,000 participants the number of fatalities each year for hang gliding is 22. This, it claims, makes pilots of hang gliders less intrepid than balloonists (death rate 67) or airline pilots (97).

C Hang gliders are a marvel of simplicity and strength. A tough framework of aluminium tubing supports a tailored sail stiffened by lots of alloy battens (these hold the wing in shape). The whole structure is braced by stainless-steel rigging wires. Tolerances are so fine that manufacturers have to cut the entire sail on the same day to avoid variations induced by changes in temperature and humidity. And the designs of hang gliders have changed radically from early prototypes made from bamboo and polythene.

D This unusual form of unpowered flight traces its origins back to the work of a German pioneer, Otto Lilienthal, in the 1890s. He carefully recorded the results of more than 2,000 experimental flights by man-carrying gliders, many of them made from a 50-foot (15-metre) high purpose-built hill near Berlin.

E But modern hang gliding owes everything to a pioneer who is still alive: Francis Rogallo. He was employed in America's space effort during the 1950s to design a steerable parachute for space-capsule reentry. His work was never used for its intended purpose, but adapted instead by water-skiers to produce a simple kite which could be towed aloft. It was a small step from this to attempting to make foot-launched flights on these fragile craft, from the gentle and forgiving sand dunes of coastal California. By the early 1960s, hang gliding was reborn.

F Since then home-built kits have been replaced by production-line models made by about 20 manufacturers. Flights used to last a minute or two. Today's pilot can remain aloft for hours while travelling huge distances. The world distance record is currently held by an American, Larry Tudor, at 303 miles (488 km). It took him nearly nine hours to travel from Hobbs, New Mexico, to Elkhart, Kansas.

G Once airborne, actually flying requires subtlety rather than strength — one reason why women pilots often perform better than men. The pilot is suspended prone in a cocoon-like harness and controls direction and speed through gentle shifts of body weight. Launching the machine demands a committed run of just a few steps down a slope facing the prevailing wind. Landing is harder. The pilot needs the same kind of precision possessed by large birds when they land on level ground.

H The necessary accessories include a helmet, gloves, an emergency parachute and a variety of instruments, including a variometer. This clever box of electronics detects tiny changes in air pressure, and relays this information as an audio tone and visual readout. Changes occur as the pilot climbs (lower pressure) or descends (higher pressure). The skill is in loitering in the rising air and avoiding the inevitable sink.

I All new glider designs undergo rigorous tests before being certified airworthy. There are no internationally agreed standards, but it is generally accepted that the systems adopted by Germany and Britain are especially stringent.

J In Britain, the British Hang Gliding and Paragliding Association (BHGPA) employs a mobile test rig upon which the aircraft is mounted. The whole unit is towed at high speeds behind a suitable vehicle, allowing various flying profiles to be tested and measured against the required extremes.

K Training and coaching have also kept pace with technology and design. In Britain, full-time BHGPA officers regulate training for beginners in commercial schools, and volunteer coaches at the 40 local clubs throughout the country provide further training for their 3,500 members. Different countries have different systems for rating the proficiency of pilots, but all aim to measure attainment, skill and knowledge through practical tasks and written examinations.

L Hang gliding attracts the sort of people who enjoy a sense of freedom and adventure. What organization there is exists mainly to stave off the threat of external controls and to foster competition at the highest level. At the 1991 World Championships in Brazil, 114 pilots represented 30 countries. The 1993 event, to be held at Owens Valley, California, from June 26th to July 10th, is expected to attract an even wider international field. Quite a change since foolhardy Germans jumped off Otto Lilienthal's hill.

Questions 12-14

Do the following statements agree with the writer of the above passage? Please write

YES	*if the statement agrees with the writer;*
NO	*if the statement does not agree with the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example:	Answer:
Gliders used to be made of bamboo and polythene.	*YES*

12. Francis Rogallo was involved in the retrieval of spacecraft.
13. It is more difficult to land a hang glider than to control it while flying.
14. The new world distance record was set at the 1991 World Championships in Brazil.

Unit Two

Cloze
Điền ô trống

Trong môn thi đọc IELTS không có dạng đề điền ô trống trực tiếp mà chỉ có đề yêu cầu điền ô trống của một đoạn văn dựa trên một bảng kê từ cho trước. Loại đề này không chỉ kiểm tra khả năng hiểu bài đọc và tổng hợp thông tin của thí sinh, mà còn kiểm tra kiến thức ngữ pháp và từ vựng của thí sinh.

Các bước giải đề:

1. Đọc lướt nhanh cả bài, hiểu được đại ý.

2. Trở lại câu thứ nhất của bài đọc, đọc đến cuối câu có ô trống đầu tiên và đoán đáp án. Phán đoán từ loại của từ hoặc cụm từ cần thiết, tức là ô trống cần điền danh từ, tính từ hay động từ.

3. Tìm từ có ý nghĩa và từ loại thích hợp trong các từ và cụm từ cho sẵn.

4. Dùng cách tương tự đọc các câu có ô trống và tìm kiếm đáp án.

Thí dụ:

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps.

A. effect
B. validity
C. because
D. suppression
E. advantage
F. treatment
G. why
H. evidence
I. different
J. release
K. prove
L. show
M. treat
N. worked
O. response

Does It Work?

Acupuncture, rooted in a 3,000-year-old tradition of yin and yang, meridians and chi, has to work hard to *(example)* it has scientific validity. But George Lewith, a researcher at the University of Southampton, in England, who has studied the technique for 25 years, has ___1___ that it does. In 2004, he showed that real acupuncture has a statistically significant ___2___ over sham acupuncture in the treatment of arthritic neck pain. Now, he is trying to show ___3___.

It has been known for a decade that merely anticipating receiving acupuncture has an ___4___ on areas of the brain that ___5___ chemicals called endorphins. These are natural opiates that are involved in the ___6___ of pain, and this anticipation-driven ___7___ is believed to be responsible for the placebo effect — the fact that merely believing a ___8___ will help means that it actually does help. What Dr. Lewith has now shown, in a paper just published in NeuroImage, is that inducing a placebo effect with acupuncture has a ___9___ effect on the brain from that of receiving actual acupuncture.

Example: K

Câu 1: Đáp án là H. Dựa vào cấu trúc câu của câu thứ hai, phán đoán hoặc là điền phân từ quá khứ (lúc này mệnh đề "that ..." là mệnh đề tân ngữ), hoặc là điền danh từ (lúc này mệnh đề "that ..." là mệnh đề ngữ đồng vị) vào ô trống. Trong các lựa chọn cho sẵn chỉ có từ worked là phân từ quá khứ, nhưng không hợp nghĩa. Do đó, chúng ta cần tìm một danh từ, danh từ có nghĩa thích hợp chỉ có evidence.

Câu 2: Đáp án là E. Đầu tiên chúng ta dễ dàng phán đoán ô trống phải là danh từ. Câu này so sánh real acupuncture và sham acupuncture, phía sau ô trống là từ over, cho nên điền advantage vào.

Câu 3: Đáp án là G. show trong câu này có nghĩa là *chứng minh, chứng tỏ*, theo sau thường là mệnh đề.

Câu 4: Đáp án là A. Dựa vào ngữ cảnh chúng ta biết đáp án là danh từ, bắt đầu bằng một nguyên âm, hơn nữa kết hợp với giới từ on.

Câu 5: Đáp án là J. Dựa vào ngữ cảnh, phán đoán ô trống cần điền vào động từ, động từ phù hợp về mặt ý nghĩa là release. Nghĩa của câu này là chỉ trông đợi vào việc tiếp nhận sự điều trị bằng châm cứu sẽ sản sinh tác dụng đối với khu vực giải phóng một loại chất hóa học gọi là endorphin đối với bộ não.

Câu 6: Đáp án là D. Nghĩa của opiates là thuốc có chứa thuốc phiện. Chất có chứa thuốc phiện do não phóng thích này có tác dụng ức chế cơn đau, nhưng không có tác dụng chữa trị (treatment).

Câu 7: Đáp án là O. Não sản sinh endorphin vì mong muốn là một dạng phản ứng, tức là response.

Câu 8: Đáp án là F. Trong số các danh từ chỉ có treatment là hợp nghĩa.

Câu 9: Đáp án là I. Rõ ràng đáp án phải là tính từ, vì có sự so sánh đối với hai sự vật, và chỉ có different là phù hợp.

Exercise 1

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. standardize
B. units
C. basic unit
D. the human body
E. the length
F. the mile
G. the Equator
H. measuring instruments
I. the width
J. early measurements
K. diameter
L. the distance from
M. one metre
N. the inch
O. approximate
P. country
Q. weight
R. standard of measurement
S. constant

Standards of Measurement

In early times, measurements were made by comparing things with parts of *(example)*. Early units of measurement included the distance from the elbow to the fingers, the width of the hand and __1__ of the fingers.

Some of these human measurements are still used. For example, __2__ is based on the length of half the thumb. A foot was originally __3__ of a man's foot. A mile was one thousand walking steps.

These units were only __4__, because their standard — the human body — was not constant. Governments tried to __5__ them by using rods of fixed lengths. But these rods still varied from __6__ to country.

During the French Revolution, scientists looked for a __7__ which did not change. They chose the distance from __8__ to the North Pole, which is one quarter of the circumference of the Earth. One ten-millionth of this was called __9__ and became the basic unit of the metric system. Other metric __10__ are based on it. For example, the centimetre is one hundredth of a metre. A gram — the unit of __11__ — is the mass of one cubic centimetre of water.

A standard metre was marked on a platinum bar. The accuracy of __12__ was checked by comparing them with this bar. Nowadays the metre is standardized by comparing it with another __13__ — the wavelength of a certain kind of light.

Example: D

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____
8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 2

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. carbon dioxide
B. prevent
C. back
D. fossil fuel
E. some climatic changes
F. only a small part
G. result
H. temperature
I. transport
J. leaving
K. make way for
L. air pollution
M. sunlight
N. in the atmosphere
O. happening
P. balance
Q. poles
R. radiation level
S. dust level

The Function of Carbon Dioxide in the Atmosphere

Every year there are changes in climate in different parts of the world. Some of these changes are due to natural causes. However, *(example)* are caused by air pollution and these changes may increase. One kind of pollution results from burning oil and coal in __ 1 __ and in factories.

If the pollution affects the level of __ 2 __ in the atmosphere, the results are likely to be serious. Carbon dioxide constitutes __ 3 __ of the atmosphere. But it has an important function in maintaining the balance between radiation from the sun entering the atmosphere and radiation __ 4 __ the Earth. Some of the radiation is absorbed by the Earth and some is radiated back into the atmosphere. The carbon dioxide __ 5 __ prevents some of the radiation from leaving the atmosphere. Thus the heat remains in the atmosphere and carbon dioxide helps to __ 6 __ the temperature of the Earth from falling.

If the proportion of carbon dioxide in the atmosphere is increased as a __ 7 __ of air pollution, the temperature of the atmosphere may rise. This might eventually cause the ice in the north and the south __ 8 __ to melt. If this happened, the sea level would rise and parts of the Earth would be flooded. The likelihood of this __ 9 __ is remote, but the possibility exists.

There is also a fairly strong possibility that the __ 10 __ in the atmosphere will rise as a result of industrial pollution. This dust pollution will reflect sunlight __ 11 __ into space. If this happens, less sunlight will reach the Earth and the temperature will fall.

Another danger comes from the destruction of the Earth's vegetation, such as the forests of Brazil, which are being cleared to __12__ farmland and cities. Trees use carbon dioxide and their destruction may upset the __13__ of carbon dioxide in the atmosphere.

Example: __E__

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____

8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 3

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. into the blood
B. for example
C. digests protein
D. the function of the brain
E. the circulatory system
F. needed for growth
G. as a support for the body
H. in turn
I. sexual activities
J. a separate function
K. consists of various glands
L. which includes the skin
M. connective tissue
N. to support the body
O. known as hormones
P. storing glycogen
Q. so small that
R. holds together
S. covered with a thin membrane

The Properties of Systems in the Human Body

The human body is made up of a number of different systems. Each system has *(example)*, but some work together. One system is the skeleton, which serves __1__ and protect the internal organs. The respiratory system enables us to breathe and take oxygen __2__, which moves around the body by means of the circulatory system. The digestive system enables us to take in food __3__. Waste matter is ejected from the body by means of the urinary system.

The endocrine system __4__, such as the thyroid, sex and adrenal glands. The function of these glands is to secrete chemicals, __5__, into the blood. These hormones control various processes in the body, such as growth, __6__ and digestion. The nervous system controls the other systems and enables human beings to think.

Each system is made up of organs. The lungs, __7__, are part of the respiratory system. The heart is an organ in __8__. The liver functions as part of the digestive system and other systems.

Every organ is composed of several kinds of tissue. Epithelial tissue, __9__, forms a covering over organs. Connective tissue supports and __10__ parts of the body and includes bone and cartilage. Other types of tissue include nerve tissue and blood tissue.

All tissue consists of cells. These are __11__ they are measured in thousandths of a millimetre and can only be seen with a microscope. Each cell is __12__ which surrounds a nucleus, and a jelly-like substance, called cytoplasm. This __13__ contains minute particles, each with its own special function.

Example: __J__

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____

8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 4

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. consists of
B. complex materials
C. disappear
D. the solvent
E. engine oil
F. evaporate
G. finding out
H. plastics
I. a soluble one
J. provided that
K. the separating process
L. synthesis
M. water
N. the filter
O. at the lowest temperature
P. separated
Q. analytical
R. so that
S. a solution

Analysis and Synthesis

Two of the main procedures carried out by chemists are analysis and synthesis. Analysis is *(example)* exactly what a substance consists of in terms of mixtures, compounds and elements. Synthesis is making ___1___ from simpler ones. Such complex materials include ___2___ and "synthetic" fibres.

In both analysis and ___3___, it is often necessary to separate solids from liquids. Some solid substances seem to ___4___ when they are mixed with a liquid. They dissolve to form a solution, as when salt dissolves in ___5___ to form a salt solution. An insoluble substance can be separated from ___6___ by filtration. The insoluble substance remains on ___7___ while the liquid, or filtrate, passes through.

A dissolved substance, or solute, can be ___8___ from the liquid in which it is dissolved by boiling away the solvent. This process is evaporation. Alternatively, ___9___ can be separated by distillation. In this process, the liquid is boiled ___10___ it evaporates. The vapour is then cooled so that it condenses again.

Two or more liquids mixed together can be separated by fractional distillation, ___11___ they boil at different temperatures. The liquid which boils ___12___ is separated first, then the one with the next lowest boiling point, and so on. This process is used for separating petrol, paraffin and ___13___ from crude oil in refineries.

Example: G

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____

8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 5

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. from liquid to gas
B. on the other hand
C. a colourless liquid
D. such as
E. will dissolve
F. two or more
G. sodium and chlorine
H. reacts violently
I. a mixture of
J. a harmless solution
K. form compounds
L. a colourless gas
M. during the chemical reaction
N. the melting point
O. sodium chloride
P. an element and a compound
Q. when it changes its state
R. a melting point
S. from solid to liquid

The Properties of Elements, Compounds and Mixtures

A substance may be an element, a compound or a mixture. An element, *(example)* nitrogen or iron, cannot be broken down into simpler substances. When ___ 1 ___ elements combine, they form a compound.

When elements combine to ___ 2 ___, there is a chemical reaction. Some properties of the elements change ___ 3 ___. For example, the element chlorine (Cl) is a poisonous yellow gas. Sodium (Na), ___ 4 ___, is a soft silvery-white metal which ___ 5 ___ with water. However, if these elements combine, they form ___ 6 ___, or salt. This is a harmless white substance.

When substances are mixed without a chemical reaction, they do not change their properties. Thus ___ 7 ___ sand and salt is yellowish-white in colour. It tastes both salty and gritty. If we put the mixture in water, the salt ___ 8 ___, because it is soluble. But the sand will not.

Every substance has ___ 9 ___ and a boiling point. The former is the temperature at which it changes ___ 10 ___. The latter is the temperature at which it changes ___ 11 ___. These changes are called changes of state. Sometimes the properties of a substance change ___ 12 ___. For example, if the temperature of oxygen falls below –183°C, it changes from ___ 13 ___ to a bluish liquid, which is highly magnetic.

Example: __D__

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____

8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 6

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

- A. under the ocean
- B. about 10% nickel
- C. made up of
- D. causes solidification
- E. outer core
- F. consist of iron
- G. a lot of
- H. spherical in shape
- I. 2,800 km in diameter
- J. outermost
- K. molten iron
- L. the composition of the crust
- M. surrounded by a gaseous sphere
- N. much thicker than
- O. at the centre
- P. containing sulphur
- Q. temperature and pressure
- R. and therefore solid
- S. inside the mantle

The Structure of the Earth

The Earth is a solid sphere. It is *(example)* three concentric spheres or layers. These are called the core, the mantle, and the crust. The solid sphere is __1__, which is called atmosphere.

We know most about the crust of the Earth which is the __2__ sphere. This layer is very thin compared with the diameter of the whole Earth. It is only about 10 km thick __3__ and about 30 km thick on land. It consists of rock which contains __4__ minerals. These are usually in compounds called oxides, containing oxygen, or sulphides, __5__.

The mantle is __6__ the crust. It is about 300 km thick. It consists mainly of rocks, but we do not know much about their composition.

The core, which is situated __7__, seems to be divided into two parts. The inner core is about __8__. We believe that it is mainly composed of iron, but it also contains __9__. The layer surrounding the inner core is called the __10__ and is approximately 2,000 km thick. It is probably composed of __11__ and nickel. However, the metals in the inner core seem to be rigid, __12__. This is because they are under very high pressure, which __13__ in spite of the high temperatures at the centre of the Earth.

Example: __C__

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____
8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 7

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. give it out
B. from the body
C. the body tissue
D. wear away
E. the growth of roots
F. in the form of
G. take in and give out
H. calcium carbonate
I. in small amounts
J. during photosynthesis
K. broken down
L. carbon
M. subsequently
N. buried plants
O. the pressure
P. the formation
Q. give up carbon
R. returned to the atmosphere
S. release

The Carbon Cycle

All plants and animals need carbon for growth. Carbon is present in the atmosphere *(example)* carbon dioxide gas. But it is present only __1__. This means it has to be used again and again. Animals and plants continually __2__ carbon during respiration. They also take it in when they feed, and __3__ when they die. This continual process is called the carbon cycle.

Plants take in carbon from the air __4__. In this process, plants use energy from the sun together with carbon dioxide from the air. They then make sugars, and other carbohydrates. The carbohydrates are needed for __5__, stems and leaves.

The leaves may ___6___ be eaten by animals, which digest the carbohydrates. The carbon is then used for buiding muscles and bones. Some of the carbon, however, is ___7___ after respiration, when carbon dioxide is released from the body.

When an animal eventually dies, decomposition of ___8___ takes place. Through the action of bacteria and other organisms, the chemicals are ___9___, or decomposed, and carbon dioxide is released.

Some dead plants are buried under earth. Over millions of years, ___10___ of the earth turns them into coal. When coal is burned to produce heat, carbon dioxide is released.

Many tiny animals living in the sea have ___11___ in their shells, in the form of calcium carbonate. When these animals die, their shells form layers of ___12___ at the bottom of the sea. These eventually turn into a rock, called limestone. After movements of the earth, the limestone may reach the surface. The wind and rain then ___13___ the limestone, and some of its carbon is once more released into the atmosphere.

Example: ___*F*___

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____

8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 8

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. for itself
B. a whole life
C. the skin
D. lead to
E. an inadequate amount of
F. result
G. a diet of
H. the nervous system
I. well-balanced
J. overcooked
K. a deficiency
L. a considerable amount of
M. pellagra
N. found in eggs
O. from milk
P. the growth of bones
Q. an adequate amount of
R. three quarters of
S. vitamin C

Vitamins

Food contains only minute quantities of the substances called vitamins, but they are vital for good health. For example, if you eat *(example)* meat, bread, sugar and fat, you may become ill with a disease called scurvy. This is caused by ___1___ in vitamin C, which is found in fruit and vegetables.

About fifty different vitamins have been identified, and a deficiency in many of these can ___2___ illness. Vitamin A is most important for good eyesight, but is also important for general good health. Liver contains ___3___ vitamin A, but vitamin A is also found in fish, meat, milk, butter, some fruits and vegetables.

Vitamin B, in fact, consists of twelve different chemicals, which are ___4___, cheese, butter, whole-wheat flour and vegetables. If a person has ___5___ vitamin B in his diet, this may affect his whole body, particularly the skin, ___6___ and the heart. Deficiency in vitamin B results in a disease called beriberi.

Vitamin C perverts scurvy and helps to heal injuries. Some doctors believe that large quantities of ___7___ help people to avoid colds. Fruits and uncooked vegetables are rich in vitamin C, but when they are ___8___, or left for a long time, they lose most of their vitamins.

Vitamin D is essential for ___9___ and teeth and is found in fish, liver, oil and milk. Vitamin D is the only vitamin which the body can make ___10___, but it can only do this if there is sufficient sunlight. A lack of both sunlight and vitamin D can ___11___ in a disease called rickets, which causes bones to soften and to be deformed.

Vitamins are only needed in very small quantities. A quantity sufficient for ___12___ would weigh only a quarter of a kilogram. Vitamins can be manufactured and are sold as additions to our food, but a well-balanced diet will provide ___13___ vitamins.

Example: G

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____
8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 9

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. switches off
B. a thermostat
C. switching off
D. central heating
E. about 90%
F. molecules
G. expansion and contraction
H. heating and cooling systems
I. one fifty-thousandth
J. cooled by one degree Celsius
K. liquids
L. oil
M. slow down
N. switch on
O. expand
P. a bimetallic strip
Q. the strip
R. heated
S. bend

Thermostats

Heat causes substances to expand. This is because heat causes the atoms and *(example)* in the substance to move more quickly. As a consequence, they take up more space. This is true for gases, ___1___ and solids, but gases expand much more than liquids, and liquids much more than solids. When a substance is cooled, the molecules ___2___ and as a result the substance contracts.

Thermostats make use of the principle of expansion. The function of ___3___ is to maintain a constant temperature over a period of time. They are used in refrigerators, ___4___ and many industrial processes.

When different materials are heated, some ___5___ more than others. For example, if brass is heated by one degree Celsius, it will expand by ___6___ of its length. Heating copper, on the other hand, will cause it to expand by ___7___ of this. One kind of thermostat contains a strip of brass and a strip of copper which are joined to form a "bimetallic strip". When the strip is ___8___, the different metals expand by different amounts. As a result, the strip is forced to ___9___ towards the side which expands less. This bending can be used to operate a valve or open and close an electrical circuit.

Such a bimetallic strip is used in central heating systems. It ___10___ the heaters when the air reaches a certain temperature, and switches them on when the temperature falls. One end of ___11___ can move while the other is fixed. The free end completes an electrical circuit which controls the gas or ___12___ burner. The strip bends as it is heated. At a certain temperature, the strip bends sufficiently to break the contact, thereby ___13___ the burner.

When the air cools, the strip contracts until it makes contact and switches the burner on again.

Example: ___F___

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____
8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 10

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. eventually
B. increases
C. constantly
D. car braking system
E. compressed
F. transmitting
G. rapid
H. compression of a gas
I. resistance
J. the pressure
K. pressure
L. depend
M. in inverse proportion
N. into a smaller space
O. difficult
P. change in volume
Q. gas pressure
R. in direct proportion
S. increase in temperature

Pressure

Gases are made up of atoms and molecules, which are in constant and *(example)* motion. The atoms and molecules are ____1____ hitting the walls of the gas container. In doing so they exert pressure on the walls.

Gases have no definite shape or volume. The shape and volume of a gas ____2____ on its container. Compared with solids and liquids, the molecules of a gas are relatively far apart. Hence they can be compressed, or forced into a smaller space. But if the volume of a gas is decreased, its pressure ____3____, because the molecules hit the walls more often and more rapidly. Thus pressure is ____4____ to volume.

A liquid, on the other hand, cannot be compressed. If we try to force a liquid __5__, it seeks a way out of the container. The pressure which a liquid exerts on the walls of a container is equal in all directions. This is why liquids are used for __6__ power in different directions, in hydraulic brakes and lifts.

The more a gas is compressed, the greater its __7__ to compression. If a large amount of gas is forced into a small space, it becomes __8__ to compress further. Under very high pressure, compressed gas can be used for transmitting power.

As __9__ is increased, the molecules are forced closer together. If this continues, the molecules __10__ become attached to one another. At this point, the gas changes into a liquid.

The pressure of a gas varies with temperature. Pressure is __11__ to absolute temperature, since the higher the temperature, the more rapid the motion of the molecules, and consequently the greater __12__ exerted on the walls of the container. Conversely, the higher the pressure of a gas, the higher its temperature. When a gas is __13__, it becomes hotter.

Example: __G__

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____

8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 11

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. go away	H. nonverbal communication	N. perceptions
B. the facial nonverbals	I. tone of voice	O. body language
C. words	J. as well as	P. nonverbally
D. effective	K. critical	Q. difficult
E. face to face	L. nonverbal responses	R. sensitive
F. communicate	M. societal	S. channels
G. nonverbal signals		

Importance of Nonverbal Communication

Do you realize that only 35 per cent of communication may be verbal? When you speak *(example)* with a person, that person may be receiving 65 per cent of your message by means other than the words you use — by your __1__, your gestures, even by the way you stand and are dressed.

In one view, the relative ability or impact of __2__ may reach 55 per cent and the vocal nonverbals 38 per cent. It may be that the blending of __3__ has more to do with meaning than the simple summing of all the channels. In other words, the verbal is still __4__ to how we interpret the nonverbal.

When we find that a gesture that means "come here" in America means "__5__" in Italy, we begin to sense the problem. There is evidence that in our own culture, black and white job applicants behave quite differently __6__, even though their intent is the same. One writer suggests that white people "run white" and blacks "run black". Perhaps a culture or subculture creates its own system of __7__. There is also evidence that the sexes differ in their nonverbal behaviours, and that they are in line with __8__ role expectations.

When combined with the verbal message, nonverbal signals are quite __9__ in conveying ideas, particularly emotional concepts such as love and hate. People display quite different __10__ to various emotional situations. One study found that some people are more __11__ than others to nonverbal signals, and that such individuals tend to function better socially and intellectually. The same study also found that young people are less sensitive to __12__ than older people are. No wonder that in some speech communications, our voices and our actions speak so loudly that our __13__ are often unheard or are not very persuasive.

Example: __E__

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____

8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 12

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. send a message
B. fifteen minutes
C. easily
D. appropriate
E. of course
F. person to person
G. at times
H. differently
I. translates
J. interpersonal relations
K. nonverbal
L. different
M. discuss
N. occasionally
O. together
P. a small audience
Q. intimate
R. stand
S. by a news special

Space and Distance

Each of us carries a kind of space bubble around us to mark off our personal territory. It varies in size from *(example)* and according to the culture from which we come. More hostile people are thought to have larger bubbles. They are more ____1____ angered and upset because it is easier to bruise their larger bubbles. People also have different bubbles for ____2____ situations. We "occupy" a certain room of the house: my room, Dad's den, and Mom's living room are pretty special ____3____. Invasions into another's room often make us quite unpopular.

Cultural influence is considerable. Latin Americans and Arabs tend to stand close ____4____ when they talk. Most North Americans like to talk at arm's length. What is normal distance for Latin Americans and Arabs is considered ____5____ by most of us. The possibility of poor or at least confused interpersonal communication is obvious! Within our own culture these ____6____ distances change according to the message and how well we know the listeners. We tend to ____7____ farther away from strangers than from friends. Of course, we are apt to stand closer when saying "I love you" than "Hello there!" We also use our voices ____8____ according to distance, message, and mood.

Time is another element over which you have some control. Seldom are you in trouble for being early, but ____9____ you may get in trouble for being late! One famous American general who had risen from the ranks claimed that one of the secrets of his success was always being ____10____ early for appointments. Almost every interview form includes an evaluation of the subject's dependability, which often ____11____ into his or her attitude toward being on time. Our general culture tends to stress promptness. Television viewers complain by the thousands when a scheduled programme is delayed ____12____ or a game that runs into overtime. Lateness suggests low regard for the sender, the situation, or the message. We can often save strained __13__ by giving good reasons when we are late.

Example: __F__

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____
8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 13

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. significantly
B. poker-faced
C. interesting
D. the impact
E. more recent
F. try it out
G. as well as
H. makes no difference
I. ratings
J. told
K. confidentially
L. perfectly balanced
M. socialized medicine
N. vary
O. retention
P. professional
Q. create
R. realize
S. the subject

Humour

If you feel you do not tell a joke well or if you find it difficult to be a humorous speaker, perhaps you need not be too concerned. The limited speech research on (example) of humour on an audience seems to indicate that at least in persuasive speeches it __1__. A study by P.E. Lull found that audiences listening to humorous and nonhumorous speeches on __2__ were equally persuaded by both speeches. Donald Kilpela obtained the same results in a __3__ study which used government health insurance as the topic. Both methods were effective, but they did not __4__ significantly in effectiveness. A series of studies by Charles Gruner produced similar results, except that humour seemed to improve the character __5__ of the speaker. A study by Allan Kennedy found that "subjects viewed the humorous introductory speech as __6__ more effective, enjoyable, and interesting". A study by J. Douglas Gibb comparing humorous and nonhumorous information lectures did show significantly better student __7__ of the humorous lecture. Lull and Kilpela were quick to point out, however, that the type of humour in their studies may not have been very __8__. In other words, a Don Rickles or a Bill Cosby might have produced significant persuasive results. In any event, funny anecdotes (if __9__ well and in good taste) have probably helped many an otherwise dull speaker, subject, or audience.

If you decide to try humour in the form of anecdotes in order to __10__ interest, make the humour as professional as possible. There is no feeling quite as desperate as the one that results from viewing a __11__ audience after you have told your best joke. Make sure that the anecdote is related to either __12__ or the occasion; make sure you can tell it fluently; make sure you remember the punch line; and make sure that it will not offend your audience. The best advice of all __13__ on a small group of friends first. In other words, *practise* and *polish*!

Example: _D_

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____

8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 14

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. practical
B. on the contrary
C. in an instant
D. aware of
E. occur
F. controversy
G. nonscientific
H. breathing
I. fear
J. critically
K. frightens
L. perception
M. automatically
N. control
O. eliminate the fear
P. latter
Q. frightening
R. trembling
S. emotional fright control

The Theory of Emotion

In 1884, the famous philosopher and psychologist William James presented a relatively simple and extremely useful theory of emotion. Although there is _(example)_ over this theory in some academic circles, the theory has great __1__ value for many of us.

"Our natural way of thinking about emotions is that the mental ___2___ of some fact excites the mental affection called the emotion (for example, fear) and that this ___3___ state of mind gives rise to the bodily expression. My thesis ___4___ is that the bodily changes follow directly the perception of the exciting fact (stimulus) and that our feeling (awareness) of the same changes as they ___5___ is the emotion."

This gist of these words is that our awareness of our reactions to a ___6___ situation is the real emotion. James's favourite illustration of this theory was that of a man coming upon a bear in the woods. In a ___7___ way, we might say the bear triggers the emotion of fear in us. Not so, for according to James, our body reacts almost ___8___ to the bear. Our natural survival devices take over to prepare us for an emergency. Our muscles tense for better agility, our heartbeat and ___9___ quicken to provide larger supplies of fuel, our glands secrete fluids to sharpen our senses and give emergency energy. All of this happens ___10___. Then we become aware of our bodily reactions. We sense our heavy breathing, our muscles tense to the point of ___11___, perhaps even adrenalin surges into our system. It is this awareness of our reactions that ___12___ us; in other words, the awareness is the emotion. This knowledge and understanding, other things being equal, will help you better ___13___ what action you take and thereby improve your chance for survival.

Example: ___F___

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____
8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 15

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. characteristics
B. improving
C. about speech
D. handsome
E. climate
F. superficial
G. well-adjusted
H. vice versa
I. sense of beauty
J. functional
K. more than
L. else
M. total personality
N. make-up
O. accommodate
P. evidence
Q. natural
R. energy level
S. communication

Physical Characteristics

When we first see another person, we are affected by what we see, even before we communicate orally. Large, fat, sloppy, *(example)*, cool, or whatever — each characteristic will attract or repel us. Physical characteristics are __1__ just physical attractiveness, although in an initial meeting we often have little __2__ to judge.

By physical characteristics we mean the total physical __3__ of an individual. This includes environmental causes of appearance, such as diet, drugs, and __4__, as well as hereditary factors. People vary physically in their reaction time, __5__, and rate of learning. They also vary in hearing, sight, colour, size, shape, and so on — all of which add up to and influence __6__ as well as physical attractiveness. After all, beauty is skin deep only in the __7__ sense. The feedback we decode from society about our physical make-up and the way we __8__ that feedback probably affect our attractiveness more than our superficial physical __9__ do.

Other things being equal, __10__, smart young people are perceived as more attractive than those not as smart. There is some __11__ that physical attractiveness is more important between than within the sexes. That is, girls tend to care more about what their boyfriends look like than what their girlfriends look like (and __12__). The role of clothing, cosmetics, calorie counting, surgery, and other possible means of __13__ our appearance becomes critical when added to what nature gave us.

Example: __D__

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____

8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 16

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. completely or partly
B. understanding
C. even
D. the attitudes
E. protect
F. objective solutions
G. penalties
H. favourable
I. hold
J. attitudes
K. acquire
L. attitude
M. value systems
N. temporarily
O. combination
P. reference points
Q. sometimes
R. high grades
S. and so forth

Attitude Functions

One theory is that attitudes have different functions for our different personalities. If we understand why people have *(example)* they do, then we are better prepared to predict how and when they might change. People may __1__ similar attitudes but for quite different reasons. One person's attitude toward liberalizing marijuana __2__ might be based on the practical problems of enforcing the current law; another's on a difference in lifestyle. The same __3__ might serve an ego-defensive function for a user. Another person might arrive at the same attitude for some __4__ of the above reasons. Here are three general functions of attitudes:

1. A referencing function. People need standards or frames of reference for __5__ their world, and attitudes help to supply such standards. We derive prepackaged norms and attitudes from our larger value systems and culture. These supply __6__ for better comprehension of a very complex world. When we are exposed to new knowledge which affects us, we often find our __7__ a handy frame of reference for categorizing and understanding it.

2. A self-identification function. Our attitudes help us define and know who we are. Some attitudes express our __8__ positively. We gain identity as well as satisfaction from the expression of some cherished attitudes. Our prayers in church, our oath of office or allegiance, __9__ the clothes we wear — all help us assert and identify ourselves. When our feelings do not agree with our beliefs, we __10__ have trouble with this function.

3. An ego-defensive function. We often develop attitudes thought to __11__ our egos from conflict and frustration. These attitudes help us reduce anxieties and adjust to threats. They can help us survive __12__ difficult times by removing the heat from conflict, the pain from frustration. When totally unrealistic and persistent, they can hurt us by delaying ___13___ to the problems and delaying our social adjustment to the real world.

Example: ___D___

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____
8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 17

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. forms
B. pursuing
C. one another
D. the power to recommend
E. spontaneous
F. interaction
G. different aspects
H. unavoidable
I. the audience
J. an audience
K. depend
L. discussion
M. information-sharing
N. procedural
O. audience
P. include
Q. in a group
R. instructional
S. cooperative

Contemporary Forms of Discussion

In this context, the word *form* refers to the type of format of discussion. In its most general sense, group discussion is a *(example)* thinking effort, usually among twenty persons or less. The basic ___1___ of group discussion are dialogue, panel, and symposium.

A dialogue is a two-person ___2___ that may be a simple conversation, an interview, or counselling. If a dialogue is held before an audience and ___3___ is invited to participate, the interaction becomes a dialogue forum.

The panel discussion is most often composed of three to seven persons ___4___ a common goal in an informal climate that aids spontaneous interaction. An audience may or may not be present. A panel discussion generally calls for a ___5___ leader, one who plans, starts, and ends the meeting, and some agenda.

A symposium is a small group (three to five) that has special knowledge of __6__ of a broad topic. Each individual makes uninterrupted speeches before an audience. A procedural leader controls the order of speakers and the time limits. A forum usually follows, except when __7__ is not physically present (as with radio or TV broadcasts). Frequently, the symposium speakers then relate to __8__ more informally in a panel discussion.

These forms of __9__ may be used for information-sharing, problem-solving, or decision-making, as well as for instructional purposes. Examples of __10__ groups are staff meeting, study groups, and workshops. The overlap among these groups is evident and probably __11__. A workshop, for example, may be thought of as a study group that has concentrated its work into a couple of days, or even a few hours. Problem-solving groups __12__ committees, conferences, and governing boards or councils. These discussion groups have the power of decision or at least __13__ action based on their collective problem-solving. Their group discussions are usually closed to non-members.

Example: __S__

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____
8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Exercise 18

The following are some words and phrases, some of which are taken from the text that follows. Decide which word or phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps. The suggested time for completing this exercise is 8 minutes.

A. summarizing
B. find
C. seeking
D. designated
E. on occasion
F. include
G. individually
H. within
I. formality
J. interpersonal
K. functions
L. procedural
M. in this area
N. you
O. such
P. superior to
Q. regulating
R. preserving
S. unless

Functions of Leadership

Leadership, whatever its source (and all group members have responsibility for the source), should in general help a group move toward its goal or help it *(example)* its goal. Leadership should also promote a healthy, democratic communication climate __1__ the group. The major functions of leadership, then, are goal achievement (content), effective interpersonal relations (communication climate), and __2__ functions.

Goal achievement elements of leadership related primarily to content include __3__ things as contributing and evaluating ideas, locating issues and consensus, synthesizing and cross-relating the ideas of others, and generally __4__ specific contributions toward a goal.

Interpersonal relations qualities of leadership __5__ include such things as controlling emotions, setting communication and psychological climates, resolving conflict, __6__ the too-talkative and the silent, and generally promoting those actions concerned with particularly social and human problems.

Procedural functions leaders, particularly when assigned or __7__, must also attend to the more practical functions such as starting the meeting, drafting and/or following the agenda, clarifying statements, __8__, and ending the meeting. Procedural functions may also include advanced planning and physical arrangement. As a procedural leader, __9__ must review the purposes of the meeting. You should consider the members individually and decide the degree of __10__ necessary and the specific way you wish to open the discussion. You should consider group goals according to the time available. As a procedural leader, you are also responsible for participation — that is, for __11__ order, seeing that only one person speaks at a time, and fairly distributing the right to speak. You may find it necessary __12__ to clarify what has been said as well as to remind the group of the agreed-upon agenda. The agenda should be agreed on by the members __13__ it has already been designated.

Example: __B__

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____

8. ____ 9. ____ 10. ____ 11. ____ 12. ____ 13. ____

Unit Three

Multiple Choice

Chọn lựa nhiều mục

Đề thi chọn lựa nhiều mục vừa xuất hiện trong môn đọc, vừa xuất hiện trong môn nghe. Loại đề này khá quen thuộc đối với thí sinh Việt Nam. So với các kỳ thi khác, tỷ lệ của đề chọn lựa nhiều mục trong kỳ thi IELTS là rất thấp, hơn nữa đan xen với các loại đề khác, rất ít khi có ba câu liên tiếp yêu cầu thí sinh chọn lựa nhiều mục.

Đề chọn lựa nhiều mục trong các kỳ thi khác thường đưa ra bốn mục chọn. Số mục chọn trong đề thi IELTS không cố định, thường là ba đến năm, đôi khi có sáu, bảy mục chọn. Trong các kỳ thi khác, thí sinh chỉ có thể lựa chọn một đáp án được cho là chính xác trong số các mục chọn, còn trong đề thi IELTS đôi khi thí sinh có thể chọn hai hoặc ba đáp án. Bất kể chọn bao nhiêu đáp án cũng phải ghi rõ ràng. Thí dụ, một bài viết bình luận về nhiều nhân tố có khả năng dẫn đến tai nạn nào đó, cuối cùng chỉ ra các nguyên nhân dẫn đến tai nạn là: 1. Tài xế mệt mỏi, 2. Động cơ bị trục trặc, 3. Tốc độ xe. Vậy sau đây chính là hình thức của câu hỏi này:

What are the reasons that have caused the problem? (please choose three)

A. driver's fatigue
B. time of the day
C. malfunction of the engine
D. speed of the car
E. quality of the road
F. visibility

(A, C và D là đáp án chính xác.)

Nếu trong một câu cần chọn ra hai hoặc trên hai mục chọn làm đáp án, thứ tự các chữ cái được lựa chọn không quy định. Trên giấy làm bài, viết A, C, D hoặc D, A, C hoặc C, A, D đều được. Tuy nhiên, nếu chỉ viết một hoặc hai đáp án, hoặc trong ba đáp án có một hoặc hai đáp án sai thì câu này không được tính điểm, không vì một phần đáp án chính xác mà được tính 0,33 điểm hoặc 0,66 điểm.

Hãy đọc bài viết sau và trả lời các câu hỏi tương ứng. Đặc biệt chú ý đến các câu 3, 4, 6.

One Less Missing Link

A Paleontologist Gen Suwa was walking across the pebble-covered desert of north-central Ethiopia, peering carefully around him for ancient bones. Then he saw it: the telltale gleam of a fossil tooth partially exposed on the rocky ground. "I knew immediately that it was a hominid tooth," says the University of Tokyo scientist, "and one of the oldest ever found."

B It was more than that. Suwa had uncovered nothing less than a new chapter in the history of human evolution. He and his colleagues report in the current *Nature* that the archaic molar, along with other fossils they found in the area on expeditions in 1992 and 1993, belongs to a previously unknown species. This diminutive, humanlike creature walked the earth some 4.4 million years ago — half a million years earlier than the oldest human ancestors ever identified. That stretches our family tree back almost to the era when humans and apes branched off from a single ancestor.

C Paleoanthropologists have not unearthed anything this revolutionary since 1974, when the famous fossil skeleton known as Lucy was discovered about 80 km north of the current find. That 3.2 million-year-old female hominid had some human characteristics — most notably, she walked on two legs rather than four — but skull and tooth fragments indicated she was somewhat apelike as well. She fits nicely into the shared-ancestor theory first put forward by Charles Darwin and supported by modern comparisons between human and ape proteins and DNA. The divergence between the ape and human lines, argued the biochemists, came somewhere between 4 million and 6 million years ago. Some paleontologists predicted that as hominid species were discovered from periods closer and closer to the time of the actual split, they should be even more apelike than Lucy.

D Most experts assume ramidus walked on two legs, as Lucy did, but the evidence is skimpy and indirect. One clue is a tiny fragment of the foramen magnum, the opening at the base of the skull where the spinal cord joins the brain: its location suggests an upright stance. Moreover, the structure of the arm bones is different from what anatomists see in knuckle-walking apes.

E If *ramidus* really did travel on two legs, anthropologists may have to rethink their notions of what started pre-hominids on the evolutionary road that led to modern *Homo sapiens*. It is already clear from Lucy, who stood upright but had an apelike skull, that bipedalism came first and a large brain later. But what prompted the shift to two-leggedness? The conventional theory is that a change in climate transformed the eastern and southern African forests to dry, open grasslands, favoring apes that could walk upright; they would have been able to see predators from farther away and walk long distances holding food or children.

F It appears *ramidus* may have lived not on the savannah, however, but in some sort of forest. Mixed in with the hominid fossils, the scientists found thousands of fossilized tree weeds and abundant petrified wood. There were also some 600 specimens from other animals, including such forest dwellers as monkeys, kudu antelopes, bats and squirrels. Notably rare were fossils from grassland beasts like prehistoric horses or giraffes. The theory that *ramidus* was a forest dweller is still not proved, but if it is supported by more fieldwork and analysis, then theorists will have to form a new explanation for the development of erect posture by some apes.

G While the evolutionary story is still in some doubt, there is no question about the fossils' antiquity. Ancient bones cannot be dated directly, but geochronologists proceed by determining the age of nearby rocks. It also helps if the fossils have lain undisturbed since they were buried. In this case, the *ramidus* bones could not have been better placed: they were enclosed in sedimentary rock that was neatly sandwiched between layers of volcanic ash, which contains radioactive isotopes that make material easy to date. The volcanic layer just beneath the fossils turned out to be about 4.4 million years old. That jibes perfectly with the ages of other fossil animals found, which were already known from analysis of other sites.

H Scientists are debating whether the new hominid is really the common ancestor of both humans and apes, whether it's the first species to appear on the human side after the split or whether there are still several pre-*ramidus* hominids left to be found. Bernard Wood, a University of Liverpool paleontologist, thinks Suwa and his company may have discovered the seminal species. The man who found Lucy in 1974, paleontologist Don Johanson of the Institute of Human Origins, based in Berkeley, California, disagrees. "I still think we're a long way from the common ancestor," he argues. "We're one link closer, just as Lucy was a link closer. There could be room for several more species."

I All these issues — bipedalism, the forest-dwelling theory, the question of how high *ramidus* sits in the evolutionary tree — can be settled only with more fieldwork. The team is returning to Ethiopia next month, to the site hoping to find parts of other skeletons and uncover more clues about the Ethiopian environment of 4.4 million years ago. Says Suwa: "We're going to crawl on our hands and knees, looking for every giraffe, pig, bird, rodent, seed and any other fossil we can find." Humanity has just added half a million years to its heritage; perhaps the next expedition will give scientists a better idea of how much further back our line of ancestors goes.

Questions 1-2

Complete the following table about "Lucy".

Discovered in the year of	Country discovered in	Sex	Walked on	Lived ? years ago
1974	1.	female	two legs	2.

Questions 3-4

3. Which two of the arguments in the box below support the theory that bipedalism was caused by forests giving way to grasslands?

4. Which three of the arguments in the box below support the theory that *ramidus* lived in forests?

A. Fossilized tree weeds were found to be mixed with the hominid fossils.
B. Traces of other animals such as bats and squirrels were found together with *ramidus* fossils.
C. Standing on two legs, the apes could see further and notice dangers at an earlier time.
D. Fossils of prehistoric horses and giraffes were not found together with *ramidus* fossils.
E. Apes that could use the upper limbs to hold food and children while walking had a better chance to survive.

Questions 5-6

Answer the following questions by choosing the appropriate letter(s).

5. How do scientists determine the date of the fossils they discover? (please choose one)
   A. By measuring the radioactive content in the nearby rock.
   B. By determining the physical features of the fossils using anatomic techniques.
   C. By comparing with fossils of other animals who lived in the same period.
   D. By analysing the fossils using genetic engineering technology.

6. Which two of the following theories are not contested in the reading passage?
   A. The fossil tooth found by Suwa is 4.4 million years old.
   B. *Ramidus* lived in forest.
   C. Humans and apes split 4.4 million years ago.
   D. *Ramidus* walked on two legs.
   E. Climate changes millions of years ago brought some apes to the ground.
   F. Humans and apes share ancestors.

Questions 7-13

Complete the following summary of the reading passage. Choose NO MORE THAN THREE WORDS from the passage for each answer.

Charles Darwin thought that humans and apes shared ancestors. Paleontological discoveries since the great naturalist have pushed human history back millions of years ago. Lucy, the famous fossil skeleton discovered by __7__, and the fossil tooth by Suwa and __8__, have each made mankind __9__ closer to our common ancestor.

While acknowledging the importance of the latest discovery by Suwa, scientists have different opinions about how close the finding was to the time when humans and apes __10__. Apart from this, other __11__ that need further evidence to settle include __12__, the forest-dwelling theory, and such evidence can only be collected through __13__. That is why Suwa is going back, hoping to find more.

Câu 1, 2: Đáp án lần lượt là Ethiopia và 3.2 million. Loại đề dạng điền bảng này cũng hay xuất hiện, thường khá đơn giản.

Câu 3, 4: Đề này khác với đề có nhiều sự lựa chọn truyền thống. Lúc đầu, loại đề này không có quy định về số lựa chọn. Từ cách ra đề và cách hành văn rất khó phán đoán nên chọn một hay vài sự lựa chọn: Which of the argument(s) in the box below support(s) the theory that bipedalism was caused by forests giving way to grasslands? Cũng có nghĩa là dựa vào chỉ dẫn, câu này có thể chỉ có một đáp án chính xác, cũng có thể có hai hoặc hai đáp án trở lên. Ngày nay, loại đề này sẽ ghi rõ please choose one hoặc please choose two.

Câu 3: Đáp án là C và E. Trên giấy làm bài, viết "C, E" hoặc "E, C" đều chính xác. Nhưng nếu chỉ viết một trong hai câu trả lời, hoặc viết hai câu trả lời nhưng một trong số đó không chính xác thì câu này không được tính điểm.

Câu 4: Đáp án là A, B, D. Trên giấy làm bài, chỉ cần viết ba câu trả lời này, bất kể thứ tự thế nào cũng sẽ được tính điểm. Nhưng nếu chỉ viết một hoặc hai câu trả lời, câu này không được tính điểm. Nếu viết ba câu trả lời, nhưng một trong ba câu trả lời đó sai, câu này cũng không được tính điểm.

Câu 5: Đáp án là A. Đây là dạng đề chọn lựa nhiều mục truyền thống nhất, có lẽ thí sinh rất quen thuộc, cũng không có điều gì đặc biệt chú ý.

Câu 6: Đáp án là A và F. Trên giấy làm bài, viết "A, F" hoặc "F, A" đều chính xác. Nhưng nếu chỉ viết một trong hai câu trả lời này, hoặc viết hai câu trả lời nhưng một trong số đó không chính xác, câu này không được tính điểm.

Đáp án câu 7~ câu 13:

7. Don Johanson
8. his colleagues/company
9. one link
10. split/branched off
11. issues
12. bipedalism/two-leggedness
13. (more) fieldwork

Exercise 1

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Are You a Machine of Many Parts?

1 What will future historians remember about the impact of science during the last decade of the 20th century? They will not be much concerned with many of the marvels that currently preoccupy us, such as the miraculous increase in the power of home computers and the unexpected growth of the Internet. Nor will they dwell much on global warming, the loss of biodiversity and other examples of our penchant for destruction. Instead, the end of the 20th century will be recognized as the time when, for better or worse, science began to bring about a fundamental shift in our perception of ourselves.

2 It will be the third time that science has forced us to re-evaluate who we are. The first time, of course, was the revolution that began with Copernicus in 1543 and continued with Kepler, Galileo and Newton. Despite the Church's opposition, we came to realize that the Earth does not lie at the centre of the universe. Instead, we gradually found we live on a small planet on the edge of a minor galaxy, circling one star in a universe that contains billions of others. Our unique position in the universe was gone for ever.

3 A few centuries later, we were moved even further from stage centre. The Darwinian revolution removed us from our position as a unique creation of God. Instead, we discovered we were just another part of the animal kingdom proud to have "a miserable ape for a grandfather", as Thomas Huxley put it in 1860. We know now just how close to the apes we are — over 90% of our genes are the same as those of the chimpanzee.

4 Increasing knowledge of our own genetics is one of the driving forces in the third great conceptual shift that will soon take place. Others are the growing knowledge of the way our minds work, our new ability to use knowledge of the nervous system to design drugs that affect specific states of mind and the creation of sophisticated scanners which enable us to see what is happening inside our brains. In the third revolution, we are taking our own selves to pieces and finding the parts which make up the machine that is us.

5 Much of the new knowledge from genetics, molecular biology and the neuro-sciences is esoteric. But its cultural impact is already running ahead of science. People begin to see themselves not as wholes with a moral centre but the result of the combined action of parts for which they have little responsibility.

6 *It's Nobody's Fault* is the title of a popular American book on "difficult" children. Many different children, the book explains, are not actually difficult but are suffering from Attention Deficit Disorder (ADD). There is nothing wrong with them or the way they have been brought up. Rather, the part of the brain which controls attention is short of a particular neuro-transmitter.

7 ADD is currently the world's fastest growing psychological problem. In the United States, a survey showed that 1.5m children between the ages of five and eighteen were being treated with a drug, Ritalin, for the disorder. Since then the number taking the drug is believed to have doubled.

8 You might, as many people do, question the way in which the disorder has been diagnosed on such a staggering scale. But that is not the point. The cultural shift is that people are not responsible for their disorders, only for obtaining treatment for the parts of them that have gone wrong.

9 The more we know about the parts of ourselves, the more cures for our defects will appear. Prozac is one example. The best-selling *Listening to Prozac* claimed the drug "can transform pessimists into optimists, turn loners into extroverts". And Prozac, the book explained, "was not so much discovered as planfully created, through the efforts of a large pharmaceutical firm ... the likely result of this form of research is not medicines that correct particular illnesses but medicines that affect clusters of functions in the human brain."

10 Even when a treatment is not to hand, the notion that we are made of "clusters of functions" remains strong. Genetic analysis supports this view. A gene linked to alcoholism has been located and a Gallup poll has revealed that the great majority of Americans consider alcoholism to be a disease. There are claims of genes too for obesity, homosexuality and even for laziness.

11 Some claims about genes may be silly. Or you may think that the current conceptual shift is just a re-run of old arguments about the relative roles of nature and nurture. Instead, take one drug, Viagra, as an example of the new way of thinking about ourselves. If you suffer from impotence, it might have a variety of physiological causes. Or you might just be anxious about sexual performance. But Viagra does not make such fine distinctions: it acts at the level of the chemical reactions that control the blood flow needed to maintain an erection.

12 Once we can dissect ourselves into parts and know how the parts work, it really does not matter what was the initial cause of the problem. If you own a car and the brakes wear out quickly, it is not important whether you've been driving the car too hard or you bought cheap brake shoes to begin with. You just need to change the brakes.

13 The more direct means we have of changing who we are, through changing the parts that we are composed of, the harder becomes the question of who was the person who made the decision to change, before becoming someone else. This will be the real issue for the 21st century: who are we, if we are the sum of our parts and science has given us the power to change those parts?

1. What is the most important scientific progress in the 20th century?
   A. The development of computer technology.
   B. The birth and growth of the Internet.
   C. Mankind's ability to control global warming.
   D. People's new knowledge of themselves.

2. What did Copernicus discover?
   A. The Earth does not lie at the centre of the universe.
   B. The Church was wrong about the history of mankind.
   C. Human beings live on a small planet.
   D. Mankind have a unique position in the universe.

3. What did Darwin discover?
   A. Human beings were a unique creation of God.
   B. Human beings and apes shared a common ancestor.
   C. Human beings were lucky while apes were miserable.
   D. Human beings and chimpanzees were nearly identical.

4. Which of the following is NOT "one of the driving forces in the third great conceptual shift"? (Paragraph 4)
   A. Knowledge of our own genetics.
   B. Knowledge of the way our minds work.
   C. Knowledge of how to use sophisticated scanners.
   D. Knowledge of how to design drugs that affect specific states of mind.

5. **Which of the following is likely to be the main idea of the book *It's Nobody's Fault*?**
   - A. Many children are suffering from ADD.
   - B. ADD is the problem for the problematic children.
   - C. Some people's brains do not have neurotransmitters.
   - D. The way people are brought up determines their behaviour.

6. **How many people are taking Ritalin in the US?**
   - A. Less than 1.5 million people.
   - B. 1.5 million of the people aged 5-18.
   - C. 3 million of the people aged 5-18.
   - D. More than 3 million teenagers.

7. **Which of the following reflects the cultural shift?**
   - A. More people are diagnosed to be suffering from mental disorders.
   - B. People are not responsible for the problems they have.
   - C. More people are seeking mental treatment.
   - D. People begin to question the accuracy of doctors' diagnoses.

8. **What is Prozac?**
   - A. A book.
   - B. A medicine.
   - C. A type of people.
   - D. A mental disorder.

9. **Genetic analysis seems to have confirmed that there is a gene in our body that is responsible for**
   - A. alcoholism.
   - B. obesity.
   - C. homosexuality.
   - D. laziness.

10. **Which of the following does the drug Viagra illustrate?**
    - A. "Some claims about genes may be silly." (Paragraph 11)
    - B. We have a "new way of thinking about ourselves". (Paragraph 11)
    - C. A physical disorder "might have a variety of physiological causes". (Paragraph 11)
    - D. "People ... are ... obtaining treatment for the parts of them that have gone wrong." (Paragraph 8)

Exercise 2

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Making Allowances for Your Kids' Dollar Values

Would you stoop to pick up a found penny? If you believe in the value of money or the possibility of luck, you would. Unless, of course, you're a teenager. When Nuveen Investments asked 1,000 kids aged 12 to 17 to name the sum they would bother to pick up, 58 per cent said a dollar or more. Some won't give pocket space to coins even if they're already in hand, says Neale Godfrey, author of *Money Doesn't Grow on Trees*. Many high schoolers buy lunch and throw away the change, she says. As one boy explained to her, "What am I going to do with it?"

This cavalier attitude is making some parents rethink the allowance tradition. The weekly stipend is meant to help kids learn about money, but some experts say too much cash — easily handed out in these flush times — and too few obligations can lead to a fiscally irresponsible future. Many kids have a "lack of understanding (of) how hard it is to earn money," says Godfrey. "That is not OK."

Allowances, done right, are a way to teach children to plan ahead and choose wisely, to balance saving, spending, investing, and even philanthropy. Doing it right means deciding ahead of time how much to give and how often to give it. And it requires determining what the child's responsibilities will be.

About 50 per cent of children between 12 and 18 get an allowance or cash from their parents, says a survey conducted in 1997 by Ohio State University for the US Labor Department. The median amount they got was $50 a week. (Teenagers in the East North Central region, which includes Ohio and Indiana, get the most — a median of $75 a week — and kids in the East South Central, including Mississippi and Alabama, are given the least, with a median of $30 a week.) Nationally speaking, about 10 million kids receive a total of around $1 billion every week.

The problem with a parental open-wallet policy, says Godfrey: "If you're always given money, why would it have any value to you?" Earned money is spent more wisely, she says. "You're teaching them that there is not an entitlement programme in life. The way you get it is you earn it."

Godfrey thinks an allowance should be chore-based, and she divides work into two categories: citizen-of-the-household chores and work-for-pay chores. "The punishment for not doing your work-for-pay chores is you don't get paid." Other experts, including Jayne Pearl, author of *Kids and Money*, believe that every family member is entitled to a small piece of the financial pie and that it shouldn't be tied to work. Doing so "complicates things unnecessarily and imbues allowance with power struggles and control issues," says Pearl. "I think of (an allowance) as learning capital .... They have to have some money to practise with."

For many kids, 3 is a good time to begin getting an allowance, experts say. This sounds early, but it's then that children start understanding the notion of exchanging coins for, say, candy. Deciding how much to give can be tough. "If the parents can afford it, I have them pay their age per week," says Godfrey. "A 3-year-old gets $3."

Sound like a lot for a little person? Godfrey's plan takes 10 per cent off the top for charity. The remainder is divided into thirds and put into jars. The quick-cash jar "is for instant gratification." This spend-as-they-choose money means that candy bars, Pokémon cards, and other impulse buys are no longer paid for by Mom and Dad, which causes kids to curb many impulses. Says Godfrey of her 17-year-old daughter, Kyle: "Her Starbucks bill is her own."

The second jar is for medium-term savings, meant to be spent on medium-ticket luxuries like in-line skates or a CD player. The final jar is invested for the long term, such as for college.

Kelly Grant, 13, thinks that is fair. An eighth grader in Greenville, S.C., Kelly and his brother, Christopher, 15, each gets $15 a week. The trade-off: "I have to walk and feed the dog, and I have to do the recyclables," Kelly says. He spends but still saved enough to buy a Sony PlayStation.

Christopher, who has a girlfriend, spends most of what he gets; he supplements his pocket money by doing extra work, like mowing the lawn. "I'm supposed to do a load of laundry every night." He has, he admits, a tendency to forget. "They charge my allowance sometimes," he says, "but they don't really remember to do it."

The Grant boys are still learning about earning and show signs of valuing money. They wouldn't stop to pick up a dime, but both say there are coins they would rescue from the sidewalk. Says Christopher: "You can do a lot with a quarter."

1. Nuveen Investments found that
   A. many kids don't bother to pick up small coins.
   B. few kids want one-dollar coins.
   C. some kids save coins.
   D. no kids want to pick up coins.
2. Godfrey feels that
   A. many kids appreciated the value of coins.
   B. many kids know how hard it is to earn money.
   C. many kids don't know the value of money.
   D. many kids should be given more pocket money.

3. **The writer feels that allowances**
   - A. should not be given to children.
   - B. should not be given to young children.
   - C. could help children learn many things.
   - D. spoil older children.

4. **On average, children who receive the most allowances live in**
   - A. the East North Central region.
   - B. the East South Central region.
   - C. big cities like New York or L.A..
   - D. small towns in New England.

5. **Which of the following would Godfrey probably agree?**
   - A. Children should not be given allowances.
   - B. Children should receive allowances if they help with housework.
   - C. Children should be given allowances whether they help with housework.
   - D. Children should be paid for satisfactorily performing school work.

6. **Which of the following would Pearl probably agree?**
   - A. Children should not be given allowances.
   - B. Children should receive allowances if they help with housework.
   - C. Children should be given allowances whether they help with housework.
   - D. Children should be paid for satisfactorily performing school work.

7. **Who supports the idea of starting to give allowances to kids when they are three?**
   - A. The writer.
   - B. Pearl.
   - C. Godfrey's daughter.
   - D. Godfrey.

8. **According to Godfrey, if a child has a monthly allowances of $100, how much should he/she spend on "impulse buys"?**
   - A. $10.
   - B. $30.
   - C. $33.3.
   - D. $50.

9. **The Grant brothers get allowances**
   - A. without having to work.
   - B. by doing housework.
   - C. but the money is not enough.
   - D. though their parents sometimes forget to give them the money.

Exercise 3

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 10 minutes.

The Lost City of DeMille Emerges from the Desert Sands of California

For 75 years, the majestic dunes that tower over this humble coastal village have held one of Hollywood's oldest and strangest secrets.

Cecil B. DeMille, a founding father of motion pictures, once chose this remote, wind-swept site 170 miles (270 kilometres) north of Los Angeles to erect a plaster replica of ancient Egypt and stage his 1923 silent epic "The Ten Commandments." It had all the right touches, on a monumental scale — from the walls of a pharaoh's city rising 10 stories high to an avenue of nearly two dozen five-ton sphinxes lining the sand. There had never been anything like it, and it remains one of the largest movie sets ever built.

But once the cameras stopped rolling and a cast of thousands sent packing, it all vanished. Then in his memoirs, DeMille dropped a playful hint of the historic set's mysterious fate. "If 1,000 years from now, archaeologists happen to dig beneath the sands of Guadalupe," he wrote, "I hope they will not rush into print with the amazing news that Egyptian civilization, far from being confined to the Valley of the Nile, extended all the way to the Pacific Ocean of North America."

They will not. Because now, in an only-in-California endeavour as sublime as it is ridiculous, what's left of the lost city of DeMille may soon be saved by an authentic archaeological dig like none other.

That all of the Egyptian relics to be excavated are fake hardly matters, at least not to the small and zealous band of filmmakers and archaeologists leading the unusual project, or to the curious towns around here that are beginning to help pay for it. Inside the new Dunes Discovery Center along the creaking and dusty old main street of Guadalupe (population 6,000), some worn, fragile DeMille props that already have been discovered are even being displayed reverently in glass cases, as if they were priceless artifacts.

"Digging up a fake Egyptian city in California is hard to do without laughing, I know," said Peter Brosnan, 46, a documentary filmmaker who has made the buried set his abiding pastime. "But this is an important piece of early 20th-century American history. It's about the only set left from the era of silent film. We know it's down there in the sand, and we think it's mostly intact."

Chunks of artful plaster are not all they are after. The sheer size of DeMille's production also makes it a rich time capsule preserved in a mountain of sand, with abundant emblems of daily life from the 1920s. Something always turns up when the sands shift, such as cough syrup bottles once used to hold sips of alcohol.

To make the film, DeMille marched an army of 2,500 actors from Los Angeles and kept them captive there for two months in an elaborate tent city assembled on the 18-mile stretch of dunes. More than 1,500 construction workers also came to build the mammoth biblical set.

DeMille, who remade the film in the 1950s in Egypt with Charlton Heston playing Moses, even hired musicians to lug instruments into the sands of Guadalupe and play for the huge cast as it worked. But their performances on the set ended one day when a runaway horse-drawn chariot crashed into the orchestra pit.

"At first I thought that doing a real dig for this was a little strange," said John Parker, an archaeologist who has worked extensively at the dunes. "In order not to destroy this stuff we have to use the same techniques we would use as if this was a 10,000-year-old prehistoric site. But along with the film history we find, it could be a great way to see what life was like here in the 1920s."

By the time he was finished, DeMille had spent $1.4 million filming the biblical epic, a huge sum at the time. And he was way over budget. Mr. Brosnan said he suspects that DeMille buried the set because it was the cheapest option he had. Other film historians contend that he also may have been worried that another director would sneakily use it and release a similar movie faster.

Archaeologists are convinced that more than one third of the film set is long gone, ravaged by time and the powerful forces of nature along the ocean here. But after using ground-penetrating radar to probe the dunes, some of which slope as high as 500 feet (150 metres), they believe they finally know exactly where everything that's left has been entombed. Many of the sphinxes, as well as several 35-foot statues of a pharaoh king that DeMille put outside the walls of his phony Egyptian city seem fairly well preserved, they said.

"They really did a good job hiding it," said Liz Scott-Graham, the programme manager at the Dunes Discovery Center, the non-profit group that owns the dunes and treats them like a nature preserve. "You would never know it's all still there."

1. Which of the following is true?
   A. Buried under the dunes are priceless Egyptian relics.
   B. The city is Hollywood's oldest movie set.
   C. Egyptian civilization actually extended to North America.
   D. Although a replica, the city is now considered archaeologically important.

2. **Why did DeMille build the Egyptian city?**
   - A. To shoot "The Ten Commandments".
   - B. To build a tourist resort.
   - C. To commemorate a pharaoh.
   - D. To study Egyptian culture.

3. **Why did archaeologists dig up the dunes?**
   - A. To look for Egyptian relics.
   - B. To shoot a documentary.
   - C. To save the DeMille city.
   - D. To study the history of motion pictures.

4. **Filmmakers and archaeologists show interest in the site**
   - A. because they could study people's life in the 1920s.
   - B. because they could study how films were made in the 1920s.
   - C. because they wanted to know how the city was built.
   - D. because they wanted to remake the film.

5. **The following statements are true except**
   - A. DeMille buried the set because he didn't want others to use it.
   - B. DeMille did not finish the film because of the budget and had to remake it in the 1950s.
   - C. DeMille buried the set because it was the cheapest way.
   - D. DeMille used more than 4,000 people in building the set and making the film.

6. **What happened to the buried city?**
   - A. More than one third of the city is damaged by the powerful forces of nature.
   - B. The city was so well hidden that nearly everything remains intact.
   - C. Part of the city has been used by other filmmakers.
   - D. Most of the city is long gone.

Exercise 4

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 10 minutes.

Separate, But EQ

Bad news for readers of this magazine: it's not enough to be smart anymore. That's the sobering message from the folks behind the Bar-On Emotional Quotient Inventory, which is being billed as the world's first commercially available test for measuring "emotional intelligence." Israeli psychologist Reuven Bar-On, who according to promotional materials has spent more than 16 years honing the EQ test, defines emotional intelligence as "capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures and directly affect one's overall psychological well-being."

In the early 1960s, examiners would give three-year-olds a marshmallow. The children were told that if they could hold off eating it until the examiner returned from some non-existent errand, they would get a second marshmallow. Only about 15 per cent of the kids withstood the marshmallow temptation, with the other 85 per cent becoming the people who lean over the tracks to see if a train is coming. This test of "impulse control", one of Bar-On's components of emotional intelligence, turned out to be the single most important indicator for how well those kids adapted in terms of number of friends and performance in school, according to Stein.

The Bar-On test itself consists of neither chocolate nor marshmallows, and unlike some psychological exams, it's not designed to uncover nuts. Bar-On and Stein see the test as a tool to create emotional profiles, which can be used to match people to suitable careers or to identify and improve weak areas. The test lists 152 statements, including "I like everyone I meet" and "I do very weird things", which subjects judge themselves to agree or disagree with on a five-point scale. The statements cover five areas: intrapersonal, interpersonal, adaptability, stress management and general mood. Those areas can then be further broken down. For example, general mood consists of optimism and happiness. (Yours truly scored a full 20 points higher in happiness than in optimism. I'm still pretty happy, but I doubt it will last.)

In developing the test, Bar-On administered it to more than 9,000 subjects in nine countries. The large pool includes enough journalists for a comparison between purveyors of print versus broadcast news. "We found that people in the electronic media tend to be more optimistic than those in the print media," Stein said. That difference can be easily explained. A few years back, this writer covered an auction of vintage Rolls-Royces and Bentleys for another publication. A prominent television journalist, who is safer left unidentified, also showed up. My optimism took a permanent hit that day, for whereas I was scrambling for a story, he came to shop. Although he might have a strong faith in the future, my broadcast brother could afford to be more lenient with his impulse control: if he opted to eat his marshmallow, he could always afford another Bentley-load.

1. According to the passage, the EQ test
   A. is administered by a non-profit organization.
   B. has been designed to discover people who are mentally ill.
   C. can influence one's mental health.
   D. is available to paying individuals.

2. The marshmallow test showed that
   A. most children could not resist the temptation of eating the marshmallow.
   B. the four-year-olds are better able to control their impulse than the three-year-olds.
   C. most children were eager to get on the train.
   D. most children got a second marshmallow.

3. What is the purpose of the EQ test?
   A. To tell people it's not enough to be smart.
   B. To tell whether people are psychologically healthy.
   C. To tell how well people can manage personal relationship and stress.
   D. To help people find good jobs.

4. "I'm still pretty happy, but I doubt it will last." (Paragraph 3) Why does the writer say that?
   A. He scored high in general mood.
   B. He is a pessimistic person.
   C. He scored much higher in happiness than in optimism.
   D. He does not manage stress well.

5. "People in the electronic media tend to be more optimistic than people in the print media." (Paragraph 4) According to the author, this is because TV journalists are
   A. wealthier.
   C. more adaptable.
   B. less stressful.
   D. more prominent.

Unit Four

Summarizing
Tóm tắt bài đọc

Loại đề này xuất hiện dưới hình thức summary của bài đọc. Đôi khi là nội dung khái quát của cả bài đọc, đôi khi là nội dung khái quát của vài đoạn; đôi khi cho sẵn các lựa chọn, đôi khi đòi hỏi thí sinh phải chọn lựa từ thích hợp từ trong nội dung chính.

Nếu một bài viết có đề summary, nhất định phải đọc summary trước khi đọc nội dung chính và các dạng đề khác. Mặc dù trong summary có một số ô trống, nhưng tính hoàn chỉnh của các thông tin vẫn trọn vẹn, bỏ ra một hai phút để đọc là có thể biết được nội dung và các điểm then chốt của bài viết này. Thứ tự tường thuật của summary thường đi đôi với thứ tự tường thuật của nội dung chính. Summary có tính khái quát, tất nhiên sẽ bao gồm các điểm then chốt. Tìm được các điểm tương ứng trong nội dung chính có thể tìm được các từ tương ứng.

Ngoài ra, ngữ pháp cũng là một manh mối. Dựa vào ngữ pháp có thể phán đoán từ loại (danh từ, động từ, tính từ v.v.) của phần lớn nội dung đã lược bỏ. Nếu câu chỉ có chủ ngữ, không có vị ngữ, thì ô trống này chắc chắn là động từ. Lúc này, phải chú ý thì của động từ (thì quá khứ, thì hiện tại v.v.), dạng thể (dạng chủ động hay dạng bị động), số (chủ ngữ là số ít hay số nhiều). Nếu câu hoàn chỉnh, thành phần xen vào có thể đóng vai trò làm trạng từ. Nếu trước tính từ có ô trống thì có thể là trạng từ.

Điều cần đặc biệt chú ý là trong phần hướng dẫn thường có complete the summary ... using words taken from the passage, nghĩa là phải là các từ xuất hiện trong bài, có thì (động từ nguyên thể hay dạng quá khứ, phân từ quá khứ), từ loại (tính từ hay trạng từ), cấp (cấp nguyên, cấp so sánh, cấp cao nhất của tính từ và trạng từ), số (số ít, số nhiều), v.v. giống như các từ xuất hiện trong bài. Nếu từ xuất hiện trong bài là dạng quá khứ của một động từ nào đó, ví dụ: understood, nhưng về mặt ngữ pháp, trong summary cần có một động từ nguyên thể, thì động từ ở dạng quá khứ này không thể dùng được. Trong bài nhất định còn có từ khác, ví dụ các động từ nguyên thể như comprehend, figure out, know v.v..

Ngoài ra, trong phần hướng dẫn có thể sẽ có "complete the summary using NO MORE THAN THREE WORDS taken from the passage". Khi làm bài, không được dùng bốn hoặc trên bốn từ đơn, chỉ giới hạn trong một, hai, hoặc ba từ đơn. Nếu ba từ rõ ràng không thể trả lời câu hỏi nào đó, thì chắc chắn chưa tìm đúng đáp án. Thông thường, có thể không tính mạo từ xác định the và mạo từ bất định a (an). Ví dụ, cần dùng the family planning policy để trả lời, mặc dù là bốn từ đơn, nhưng trong đáp án tiêu chuẩn, mạo từ xác định đi kèm với ngoặc đơn: tức là (the) family planning policy. Nói cách khác, "no more than ... words" không bao gồm mạo từ.

Một dạng summary khác đưa ra các từ cần điền vào để lựa chọn, sẽ có ba bốn sự lựa chọn gây rối. Dạng summary này dễ hơn nhiều.

Down with Trees

Planting trees can exacerbate drought and fail to tackle climate change

Conventional wisdom says trees are good for the environment. They absorb carbon dioxide — a greenhouse gas — from the atmosphere and store it as carbon while releasing oxygen, a process for which forests have been called "the lungs of the planet". The roots of trees have been thought to trap sediments and nutrients in the soil. Trees have also been credited with steadying the flow of these rivers, keeping it relatively constant through wet and dry seasons, thus preventing both drought and flooding. It is all nonsense, concludes a research published this week.

A four-year international study led by researchers at the University of Newcastle, in Britain, and the Free University of Amsterdam, identifies several myths about the link between forests and water. For example, in arid and semi-arid areas, trees consume far more water than they trap. And it is not the trees that catch sediments and nutrients, and steady the flow of the rivers, but the fact that the soil has not been compressed.

The World Commission on Water estimates that the demand for water will increase by around 50% in the next 30 years. Moreover, around 4 billion people — one half of the world's population — will live in conditions of severe water stress, meaning they will not have enough water for drinking and washing to stay healthy, by 2025.

The government of South Africa has been taking a tough approach to trees since it became the first to treat water as a basic human right in 1998. Trees lose water through evaporation (the technical term is transpiration) at twice the rate of grassland or South Africa's unique fynbos scrubland. In a scheme praised by the hydrologists, the state penalizes forestry companies for preventing this water from reaching rivers and underground aquifers.

In India, large tree-planting schemes not only lose valuable water but complicate the true problem identified by the hydrologists: the unregulated removal of water from aquifers to irrigate crops. Farmers need no permit to drill a borehole and, as most farmers receive free electricity, there is little economic control on the volume of water pumped. In the Kolar district in Karnataka, wells have dried up as the water table has plummeted from 6 metres to 150 metres below ground.

The report — *"From the Mountain to the Tap: How Land Use and Water Management Can Work for the Rural Poor"*, which is published by Britain's Department for International Development — concludes that there is no scientific evidence that forests increase or stabilize water flow in arid or semi-arid areas. It recommends that, if water shortages are a problem, governments should impose limits on forest plantation.

Complete the following summary with words taken from the reading passage.

It is commonly believed that trees are good for the environment, as they absorb carbon dioxide and release oxygen; the roots of trees can trap water and __1__ the flow of rivers. However, a recent study has found that this belief is __2__.

According to the research, trees lose __3__ water through evaporation than they trap. In South Africa, forestry companies are punished as the trees they planted prevented water from __4__ rivers and underground aquifers. __5__, farmers drilled many wells and used the underground water to __6__ their farmland. This has lowered water table to __7__ below ground. Many trees have been planted and in fact, these trees __8__ the existing problem.

The research recommends that the government should control the number of trees to be planted in areas where __9__ are a problem.

Thông thường, câu đầu của summary là hoàn chỉnh. Đây là một trong những nguyên tắc ra đề thi.

Xét về mặt ngữ pháp và nội dung tường thuật, các động từ trong đoạn thứ nhất đều phải dùng thì hiện tại đơn. Ô trống thứ nhất phải là động từ nguyên thể, song song với trap ở phía trước. Xét về mặt nội dung, phải là từ diễn đạt ý "ổn định". Trong đoạn thứ nhất có một từ rất hợp: steadying. Nhưng từ này không phải là động từ nguyên thể, nên không thể dùng. Như vậy, ở nơi nào đó khác trong bài phải có một (hoặc hơn một) từ diễn đạt ý tương tự nhưng xuất hiện ở dạng động từ nguyên thể. Đoạn cuối cùng trong bài là đoạn kết luận của cả bài viết, lặp lại một số ý trong bài, phủ định quan niệm truyền thống cây cối ổn định nguồn nước, đã dùng từ đồng nghĩa của steady là stabilize. Cho nên đáp án là stabilize.

Xét về mặt ngữ pháp, câu có ô trống thứ hai phải có "cấu trúc hệ động từ + vị ngữ". Xét về mặt nội dung, cuộc nghiên cứu mới thách thức quan điểm truyền thống, chỉ ra It is all nonsense. Trong tình huống này, chỉ một từ đơn nonsense là đủ, hai từ đơn all nonsense đương nhiên hoàn toàn chính xác. Vì vậy đáp án là (all) nonsense. Ý nghĩa của ngoặc đơn này là: từ trong ngoặc đơn có thể có hoặc không.

Trong đề summary, để thể hiện nguyên tắc "tính đa dạng", không những động từ, danh từ mà còn các từ loại khác. Xét về mặt ngữ pháp, ô trống thứ ba phải cùng với than trong câu này tạo thành cấp so sánh. Do vậy, lựa chọn thích hợp chỉ có more hoặc less. Dựa vào nội dung trong bài, more là chính xác. Đáp án tiêu chuẩn phải là (far) more.

Dựa vào ngữ pháp, ô trống thứ tư phải là một danh động từ, do yêu cầu của prevent (prevent something from V-ing) ở phía trước. Dựa vào điểm tương ứng trong nguyên văn, đáp án phải là reaching.

Trong bài viết có hai luận cứ: Một là tình hình Nam Phi, hai là tình hình Ấn Độ. Đây là nội dung hết sức quan trọng, chắc chắn sẽ được thể hiện trong summary. Đoạn thứ hai trong summary đã nhắc đến Nam Phi, nhưng chưa nhắc đến Ấn Độ. Dựa vào ngữ pháp, ô trống thứ năm phải có liên quan đến thành phần trạng ngữ chỉ thời gian, nơi chốn v.v. Nguyên nhân là: Nếu có một câu hoàn chỉnh (tức là chủ ngữ, vị ngữ và tân ngữ), phía trước, phía sau hoặc ở giữa nó có dấu phẩy ngăn cách, thì nội dung ngoài câu phần lớn là thành phần trạng ngữ. Dựa vào nội dung bài viết, đáp án phải là In India. Chữ cái đầu tiên của hai từ đơn này đều phải viết hoa.

Ô trống thứ sáu có lẽ rất dễ: Xét về mặt ngữ pháp, phải là một động từ nguyên thể, hơn nữa có thể cùng với farmland tạo thành mối quan hệ "động từ–tân ngữ". Điểm trong bài cũng rất dễ tìm. Đáp án là irrigate. Đối với người có nền tảng tiếng Anh vững, trả lời câu này chẳng cần phải xem nguyên văn.

Đối với ô trống thứ bảy trong bài viết chỉ có một chỗ nhắc đến water table. Khi hai từ này đi liền nhau, biểu thị "mực nước ngầm". Nguyên văn nói: Do đào giếng không kiểm soát, lấy nước ngầm dùng để tưới tiêu cho ruộng đồng, mực nước ngầm từ 6 mét hạ xuống đến 150 mét. Cho nên, đáp án phải là 150 metres. Câu này không xem nguyên văn thì không thể trả lời được.

Khi điền ô trống thứ tám, phải cân nhắc câu nguyên văn do hai câu ghép tạo thành. Câu thứ hai thiếu vị ngữ. Trong phần lớn các tình huống, thứ tự tường thuật của summary đi đôi với thứ tự tường thuật của nội dung chính, nhưng cũng có ngoại lệ. Trong nguyên văn, đoạn về Ấn Độ nêu ra kết quả trước, sau đó mới đi ngược lại để giải thích. Còn trong summary, điểm tương ứng chỉ ra vấn đề (tức là khai thác quá mức nguồn nước ngầm) trước, sau đó chỉ ra cây cối sẽ làm cho tình trạng thiếu nước trầm trọng hơn. Đáp án là complicate.

Ô trống thứ chín rất dễ trả lời. Các bài viết nghiên cứu khoa học của Anh thường kết thúc bằng recommendation. Xét về mặt ngữ pháp, phải dùng danh từ để điền vào ô trống. Xét về mặt nội dung của bài đọc, ngoài water shortages ra, không còn sự lựa chọn nào khác. Cho nên, đáp án là water shortages.

Qua phân tích trên có thể thấy mạch ngữ pháp và mạch nội dung hết sức quan trọng.

Exercise 1

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Adapting to Road Conditions

The spread of adaptive cruise control may bring an unexpected bonus

Sitting in stationary traffic is, at best, a Zen experience. Drivers mired in a jam learn to cede control to the powers that be, becoming at one with the universe as they breathe in the mind-numbing fumes all around. At worst, it is an ongoing battle for sanity. But now, according to several groups of researchers in America and Germany, there is something that drivers can do to take back control over the roads. Get adaptive cruise control. And, of course, use it.

Adaptive cruise control (ACC), as its name suggests, is a modified version of traditional cruise control. It employs radar to monitor the road ahead of a vehicle, automatically adjusting that vehicle's speed to maintain a safe distance from the one in front. This is safer than manual driving because it reduces the system's reaction time from nearly a second (human) to practically instantaneous (machine), thus helping to forestall shunts. But ACC may have a useful side-effect, arising from the fact that another effect of slow human reaction times is to produce traffic jams on apparently open roads.

Such jams start when a car slows suddenly to allow, for example, another vehicle to enter the traffic stream. Slow reaction times mean that instead of responding smoothly, the drivers behind such a vehicle often end up slamming on the brakes. That slamming propagates backwards, and before long the traffic is at a standstill. So it makes sense that ACC would reduce not only collisions, but also congestion. What is unexpected is how few vehicles need to have it operating for all to benefit. As Craig Davis of the University of Michigan reports in Physical Review E, only 20% of cars need to employ ACC in order to prevent completely those jams that are caused by a slow lead car on a high-speed, single-lane road. According to Dr. Davis's computer model, even a rate of use of ACC as low as 13% can improve the flow of traffic significantly.

ACC is not a panacea. Dr. Davis got less promising results for more complex road conditions, particularly those near junctions. And a similar model built by Boris Kerner, a researcher for Daimler Chrysler, in Stuttgart, Germany, indicates that in certain bottleneck conditions, ACC may even cause extra congestion. These disappointing results can, however, be ameliorated by shortening the "headway" in ACC-equipped vehicles, according to Martin Treiber of the Dresden University of Technology, also in Germany.

Headway is the gap, measured in seconds, that a driver puts between himself and the car ahead. Since ACC reacts more quickly than a human, people who have it fitted can afford to allow less headway.

In his simulation, Dr. Davis instructed both his ACC-equipped and his manually driven cars to leave about 1.1 seconds of headway (equivalent to 28 metres at about 100 km an hour). Dr. Kerner allowed for as much as 1.8 seconds, the distance at which drivers in Germany are taught to follow. But Dr. Treiber says 0.9 seconds is safe and realistic. Using this headway in their simulations, he and his colleague Dirk Helbing saw big improvements in traffic flow even in the most dire road conditions. The question remains, of course, of whether real drivers will trust the technology sufficiently to allow it to follow the car in front so closely.

ACC has been an option in a number of luxury vehicles for several years. Now it is becoming available in mid-range cars. But its presence on the roads is still limited, and many people who have it do not use it. If drivers could be convinced to fit ACC and use it, it would not only improve their own driving experience, but also that of their fellow motorists.

Questions 1-9

Complete the following summary of the reading passage. Choose NO MORE THAN THREE WORDS from the passage for each answer. Write your answers in boxes 1-9 on your answer sheet.

Stationary traffic can drive people mad. However, according to American and German researchers, adaptive cruise control (ACC) can help drivers __1__. ACC adapts a car's __2__ to keep a safe distance from the one ahead by using __3__ to monitor the road ahead. ACC is safer than manual driving because it significantly reduces __4__, and collisions and congestion in addition. According to Dr. Davis' computer model, if __5__ of cars use ACC, __6__ can be improved significantly. However, ACC should not be seen as __7__. In __8__ conditions, it may even cause extra jams, according to a computer model. But this situation can be improved by reducing __9__ in ACC-equipped vehicles.

Exercise 2

In this exercise, you will read two passages and then answer the questions that accompany the passages. The suggested time for reading the passages and answering the questions is 25 minutes.

Passage 1:

(You are advised to spend about 15 minutes on the first passage and the questions that follow it.)

Who's Crazy?

A bizarre experiment in the United States has demonstrated that psychiatrists cannot distinguish effectively between people who are mentally disturbed and those who are sane.

According to its originators, the experiment demonstrates the fallibility of conventional psychiatric diagnosis. It also lends considerable support to the position taken by radical psychiatrists like R. D. Laing, who argue that diagnoses of mental disease are often no more than convenient labels designed to make life easier for doctors.

Eight perfectly normal people, by shamming symptoms of a mild kind, successfully gained admission to psychiatric wards where they remained undetected for as long as they could stand it. Once admitted, their behaviour was normal in every way, but doctors and nurses continued to treat them as disturbed.

In every case but one the diagnosis was schizophrenia. Once they were labelled as mentally ill, everything the "pseudopatients" did tended to confirm the diagnosis in the eyes of the medical staff, though other patients in the hospital were much less easy to convince.

The eight pseudopatients included three psychologists, a pediatrician, a psychiatrist, a painter and a housewife. All eight assumed false names and those connected with the medical profession also invented false occupations, so as not to attract special attention from fellow-professionals. The hospitals chosen ranged from expensive private units to dingy publicly-run institutions.

To gain admission, the pseudopatients told the whole truth about their lives, their emotions and their personal relationships — all of which were within the normal range — and lied only about their names, symptoms, and in some cases their occupations. The symptoms they complained of were hearing disembodied voices saying the words "empty", "hollow" and "thud".

This was sufficient in every case for them to be classified as mentally ill. Once inside they stopped pretending and behaved as normally as they could. Their stays inside varied from 7 to 52 days, with an average of 19 days.

As many as a third of the real patients inside detected that they were frauds. "You're not crazy. You're a journalist or a professor. You're checking up on the hospital," was a typical comment from a fellow-patient.

The pseudopatients spent much of their time taking extensive notes, but even this did not apparently raise any suspicions in the doctors' mind. "Patient engages in writing behaviour," was the daily nursing comment on one patient, but nobody troubled to ask him what he was writing.

The experiment was carried out under the supervision of Professor D. L. Rosenhan of Stanford University, himself one of the eight fake patients. Writing about the experiment in this week's *Science*, he concludes: "We cannot distinguish the sane from the insane in mental hospitals ... how many people, one wonders, are sane but not recognized as such in our psychiatric institutions? ... How many have been stigmatized by well-intentioned, but nevertheless erroneous, diagnoses?"

In Professor Rosenhan's view, the hospital itself is an environment that distorts judgment. As evidence, he quotes what happened to patients who asked doctors perfectly sensible questions. They took the form: "Pardon me, Dr. X, could you tell me when I will be eligible for ground privileges?" — or some similar request, courteously presented. In almost three quarters of the cases, the psychiatrist's response was to walk on, head averted. Only one doctor in 25 stopped and tried to answer the question.

But the clinching piece of evidence comes from another experiment in which a hospital was warned that pseudopatients would be presenting themselves. Faced with this threat to their professional reputation, the doctors admitting patients became much more conservative in their diagnosis. Of 193 patients presenting themselves, one doctor was firmly convinced that 41 were frauds, while another doctor suspected 23. In fact, no fake patient had arrived at all.

In the present state of knowledge, there seems little hope of more accurate diagnostics. Doctors should try to err on the side of caution, in Rosenhan's opinion, and "refrain from sending the distressed to insane places". That, and a more benign environment inside institutions, could help to sort out the insane from the merely confused.

Questions 1-10

The following are what some/all of the eight pseudopatients did/didn't do. Please tick appropriate letters.

A. none
B. some
C. all
D. can't tell if it's some or all

Example: Answer:
were accepted by private hospitals *A* [✓ *B*] *C* *D*

1. used real names A B C D
2. invented false occupations A B C D
3. were diagnosed to be suffering from schizophrenia A B C D
4. told truth about their lives, emotions, personal relationships A B C D
5. lied about their symptoms A B C D
6. continued to behave abnormally after being admitted to hospital A B C D
7. were detected by some real patients as frauds A B C D
8. spent much of their time writing A B C D
9. stayed in hospital for more than three weeks A B C D
10. were classified as mentally ill A B C D

Questions 11-16

Some of the following statements are either true or false according to the passage. If a statement is true, please write T in the space provided; if it is false, please write F. There are other statements about which no information is provided in the passage. If this is the case, please write NI in the space provided.

______ 11. R. D. Laing feels that though labelling patients with psychiatric labels makes doctors' work easier, these labels may be wrong.

______ 12. Professor Rosenhan holds a similar opinion to that of Laing.

______ 13. When patients in the mental institutions asked doctors perfectly sensible questions like "Could you tell me when I will be eligible for ground privileges?" most doctors usually stopped and tried to answer the questions.

______ 14. Doctors working in public institutions are more likely to give wrong diagnoses.

______ 15. The results of the second experiment described in the passage contradict the results of the experiment supervised by Professor Rosenhan.

______ 16. Some pseudopatients invented false occupations in order to attract attention.

Question 17

Find a word in Passage 1 that has a similar meaning to "fake" or "pseudo".

____

Passage 2:

Passage 2 describes the same experiment reported in Passage 1, Who's Crazy?, but in a more brief manner. Some of the words and phrases in the box below are taken from Passage 2. Decide which word of phrase should go in each gap and then write the letter in the space provided. Note that there are more words and phrases than gaps.

(You are advised to spend about 10 minutes on Passage 2 and the questions.)

Who Says Who Is Mad?

A. discharged
B. several weeks
C. phoned
D. frauds
E. hearing voices
F. genuine patients
G. an expert
H. pseudopatients
I. face value
J. talked
K. recording
L. a journalist
M. writing down
N. a few months

How reliable are conventional psychiatric diagnoses? A study in which eight normal people attempted to gain admission to different psychiatric hospitals has given us some alarming answers. Each of the eight *(example)* the hospital asking for an appointment. Upon arrival at the admission office, each of them complained of ___18___ which appeared to be saying "empty", "hollow", and "thud". All of them were judged to be mentally ill, and all of them were admitted to hospital. As soon as these __19__ had been admitted to the psychiatric ward, they stopped simulating signs of abnormality and their behaviour was normal, friendly and cooperative. The only unusual aspect of their behaviour was that they spent a fair amount of time __20__ their observations about the ward, its patients, and the staff. All eight people were released within __21__ of admission. But it was not because the psychiatric staff discovered that they had been sane all the time. Instead, all of them were __22__ with a diagnosis of "schizophrenia in remission", indicating that the deception had not been detected. Interestingly, several of the real patients became suspicious about the pseudopatients. They said things like "You are not crazy. You're __23__ or a professor. You are checking up on the hospital". In a reversed experiment, 41 of the 193 __24__ were judged to be pseudopatients. If we accept these findings at __25__, they suggest that the distinction between the sane and the insane is so blurred that it is entirely possible for the sane to be mistaken for the insane — at least by psychiatrists.

Example: __C__

18. _____ 19. _____ 20. _____ 21. _____

22. _____ 23. _____ 24. _____ 25. _____

Exercise 3

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 10 minutes.

Biogas: a Solution to Many Problems

In almost all developing countries, the lack of adequate supplies of cheap, convenient and reliable fuel is a major problem. Rural communities depend largely on kerosene, wood and dung for their cooking and lighting needs. But kerosene is now priced out of reach of many people and wood, except in heavily forested areas, is in short supply. The search for firewood occupies a large part of the working day and has resulted in widespread deforestation.

Dung is in constant supply wherever there are farm animals and, when dried, it is convenient to store and use. But burning dung destroys its value as fertilizer, thus depriving the soil of a much needed source of humus and nitrogen.

Rural areas of developing countries are also plagued by a lack of adequate sanitation. Improper waste disposal spreads disease, contaminates water sources and provides breeding grounds for disease-carrying insects.

The problem of improving environmental hygiene, conserving resources and finding alternative sources of fuel may be unrelated. Their solutions, however, are not, as many countries experimenting with biogas technology are discovering. Biogas, a mixture of methane and carbon dioxide, is produced by the fermentation of organic matter. The process of anaerobic fermentation is a natural one, occurring whenever living matter decomposes. By containing the matter — and the process — in a digester or biogas plant, the combustible gas can be trapped and used as fuel for household lighting and cooking. The digested slurry that remains can be used on the land as a soil conditioner and fertilizer.

Biogas plants have attracted much interest in recent years and they are in use in several Asian countries: 36,000 are reported in rural areas of India, 27,000 in Korea and more than 80,000 in China. In most countries, the value of the gas has been the prime factor leading to their adoption: 70 per cent of India's plants, for instance, were built during the energy and fertilizer crisis of 1975-76 — although their use in that country dates back to 1951. Similarly in Thailand and Korea, biogas is being investigated as an alternative to costly charcoal and to save compost materials from being burned.

In Japan and China, reducing pollution from animal wastes has been an important factor. Privies, hen houses and pigpens are built in proximity to the fermentation chamber in China. Examinations of the digested slurry have shown that the total number of parasite eggs was reduced by 93.6 per cent, hookworms by 99 per cent and no schistosome flukes were found.

The greatest benefits from biogas systems, however, are probably to be derived from the manurial value of the slurry, although it is not widely used outside of India and China. Vegetable farmers near Calcutta found that the digested slurry produced bigger and better tasting peas than did other fertilizers and the weight of root vegetables increased by nearly 300 per cent.

Questions 1-10

Complete the following summary of the above reading passage. Choose NO MORE THAN THREE WORDS from the passage for each answer.

The production of biogas by __1__ of animal and vegetable wastes is a technology that has been largely developed and used in the __2__ countries. Only very recently have scientists in the industrialized nations begun to show an interest — presumably because of the "energy __3__".

Family-sized biogas __4__ first came into widespread use in India in the 1950s in an effort to make a cleaner and efficient use of cattle __5__. The programme really expanded in the 1970s, and today there are as many as 100,000 plants throughout the world. Most are in domestic use to provide fuel for __6__, but some larger units are operated in order to recycle wastes, supply fertilizer, control pollution and improve __7__. One Chinese study has shown that digestion of animal __8__ in the air-tight digesters greatly reduces health hazards from parasitic diseases. One Indian study has estimated that the value of the __9__ obtained is in itself greater than the cost of producing the __10__. Thus, the system is economically sound, in addition to other benefits such as a cleaner, healthier environment.

Exercise 4

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 13 minutes.

A 19th Century Killer Disease: Tuberculosis

In 1882, Robert Koch, a German country doctor, succeeded in isolating the bacillus of tuberculosis. This discovery came at a time when this disease was the greatest single killer of the human race.

All during the 19th century, it had spread remorselessly with the growth of cities, until it had reached epidemic proportions throughout the industrialized world.

Its record in the United States was one of frightful devastation. Immigrants from Europe, many of them debilitated from famines at home, flooded into the poorest and dirtiest sections of cities, there to die of the disease by the thousand. Working children were infected in staggering numbers. Hundreds of thousands of children worked twelve hours a day, six days a week. Chronically exhausted and undernourished, they made particularly susceptible victims. Since tuberculosis was not considered contagious, its victims spread the disease amongst those about them as they coughed, spat and drank from communal cups.

It is now known that tuberculosis is chiefly spread by droplet infection. It can also occur as a result of drinking unpasteurized milk from tubercular cows, where the pathogen penetrates the body through the alimentary canal. However, entry of the bacillus into the body is not necessarily followed by a clinical illness, the development of which depends on several other factors. Many people, for instance, seem to have a high natural resistance and although the acquired immunity is not fully understood, it has been proved that if a person contracts and recovers from a primary tuberculosis infection, he is less likely to develop active tuberculosis on subsequent exposure to the tubercle bacillus than a patient who has not previously been infected.

Tuberculosis has notoriously been associated with poverty, with its accompanying malnutrition, overcrowding and stress, and while the exact role of nutrition is uncertain, it seems that a diet based on cheap carbohydrate and a lack of protein and vitamins is another contributing factor.

In addition, a condition such as diabetes mellitus also leads to increased risk of developing the disease, and statistics from certain mining areas in Africa show that sufferers of respiratory disorders, such as silicosis, are especially vulnerable to attacks of pulmonary tuberculosis.

The introduction of mass immunization against TB by the use of BCG vaccine, and of mass radiography, where it is possible to screen large numbers of people for early signs of tuberculosis, has dramatically reduced the incidence of the disease in the last few decades.

Questions 1-12

Complete the following summary of the above reading passage. Choose NO MORE THAN THREE WORDS from the passage for each answer.

Despite the fact that tuberculosis was the number one __1__ in the 19th century, it was not proved that the disease was __2__ until 1882 when Robert Koch succeeded in isolating the tubercle bacillus. While it is now well known that tuberculosis is spread by __3__ infection, it is also evident that entry of the tubercle bacillus does not __4__ lead to development of the disease. Although we do not yet fully understand __5__, there is evidence to show that a person who has contracted and recovered from the disease is __6__ likely to develop active tuberculosis on subsequent exposure to the bacillus than a patient who has not been __7__ infected. As with all diseases spread by droplet infection, living in overcrowded insanitary conditions greatly increases the risk of __8__. It is obvious, therefore, that in crowded cities the risk of contracting tuberculosis is far higher than in rural areas. Inadequate diet also seems to be a __9__, and sufferers of conditions such as diabetes mellitus or __10__ appear to have a lower effective degree of __11__. In the last thirty years or so, many thousands of people throughout the world have been substantially protected from developing tuberculosis largely as a result of __12__ programmes.

Exercise 5

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

For Each Astronaut, a "Buddy"

Astronauts on the International Space Station may get tiny robot helpers to assist them in daily chores and to buzz around their orbiting outpost, monitoring its condition.

Taking a page from science fiction, engineers at the National Aeronautics and Space Administration's Ames Research Center at Moffett Field, in California, are developing small robot "buddies" that could tag along with astronauts and act as personal assistants.

Developers envision little round robots about the size of grapefruit that are propelled by tiny fans through the weightlessness of a space station or shuttle. Hovering over the astronauts' shoulders and responding to voice commands, the devices, equipped with cameras, speaker, microphones and a variety of sensors, could serve as additional sets of eyes, ears and noses for the crew in space and the support staff on the ground, engineers say.

The jobs imagined for these robot aides range from the essential to the mundane.

As an astronaut works on an experiment with both hands in a glove box, for instance, the mechanical assistant could serve as a communications link with a researcher watching from Earth.

The devices also could patrol the corridors of the space station, checking for gas leaks, smoke and unusual bacterial growth, or remind astronauts about the next tasks on their daily to-do lists or of the need to send a birthday message to a loved one at home.

Yuri Gawdiak, the principal engineer on the project, said the idea of the personal satellite assistant, or PSA, came to him after an experiment between the American space shuttle Atlantis and the Russian Mir space station in 1996. That mission showed that laptop and palmtop computers could use radio signals to exchange information on a wireless network without interfering with other electronic systems aboard the spacecraft.

Afterward, astronauts told engineers that they wanted wireless palmtops, or even smaller portable data assistants, that could record and monitor data like the fictional tricorder devices popularized by the television series "Star Trek," Mr. Gawdiak said. "I took it a step further when I noticed that crews on missions left equipment to float around when they got busy," he said. "I thought they would like a device that would always face them when floating, perhaps something stabilized by gyroscopes."

He said the idea evolved further when he saw astronauts on a shuttle mission demonstrate toys in weightlessness during an educational program. Small wind-up toys hopped and flew around the cabin with startling speed and ease, he said, spurring ideas of practical mobile devices.

"Then I saw 'Star Wars' and there was a scene in the movie when the characters used a remote robot object — a fast moving ball — to practise with their light sabers," he said. "And that gave me more ideas."

The device, as now envisioned, is a ball about five inches (12.5 centimetres) in diameter that is studded with sensors for rangefinders, motion detectors and position trackers to keep it from running into things or getting lost. The battery-powered PSA could move in any direction using six tiny enclosed propeller fans and have a flat-screen video panel on one side to display data.

"This is small enough to be unobtrusive, and big enough to hold the technology that will be available in the next couple of years to do the job," Mr. Gawdiak said.

It would be impossible for each PSA to carry the computing power and instruments for all the things people suggest these helpers could do, which is where the wireless data network comes into play.

The robots would operate from a base station that would contain powerful computers for analysing sensor data, running speech-recognition and voice-synthesizer software, relaying communications and tracking the devices.

The station also would contain docking ports for recharging the PSA's batteries and a variety of sensors that could be snapped onto the robots, depending on tasks assigned to them.

Engineers at Ames completed a crucial test of the robots' components this month by mounting them on a hoverplate and guiding them around a test table on a cushion of air. And the team has received financing to develop a prototype.

"We hope to launch a personal satellite assistant in about two years aboard a space shuttle and in about three years aboard the International Space Station," Mr. Gawdiak said.

The space station, a $60 billion project involving 17 countries, will eventually house up to seven astronaut-researchers. Developers would like to use at least three PSAs on the station to demonstrate the technology, allowing the devices to work in formation to zero in on environmental problems.

Questions 1-11

Complete the following summary of the reading passage. Choose NO MORE THAN THREE WORDS from the passage for each answer.

Grapefruit-sized robots may serve as __1__ for astronauts. This idea came to Yuri Gawdiak after an experiment between __2__ astronauts. Scientists __3__ that the small robots shall perform tasks that __4__ patrolling to reminding astronauts to send a birthday message. The robots, or __5__ is powered by battery and __6__ by tiny fans. Equipped with __7__, it can move with ease and shall not __8__. Since these robots cannot carry all the necessary instruments, __9__ will enable the robots to operate from a base station. Researchers hope that PSAs shall operate on the __10__ in about 3 years' time and help solve __11__.

Exercise 6

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 10 minutes.

Management in Cyberspace

Virtual reality is often used to mimic hazardous environments — cockpits of combat aircraft, burning oil rigs, the treasure-strewn caves of irritable dragons and so on. Until now, though, it has rarely been deployed to simulate that most hazardous environment of all — the office. But if Sandra Testani of the Franklin Institute in Philadelphia has her way, it will soon be possible to hone the black arts of office politics and corporate survival on a computer before you employ them against your colleagues in the real world. Or, from the boss's point of view, you will be able to practise your skills at "co-operating" in virtual "team-building" exercises.

Dr. Testani's virtual world is called CIMBLE. The acronym stands for CADETT (which in turn stands for Consortium for Advanced Education and Training Technologies) Interactive Multi-user Business Learning Environment. The idea behind CIMBLE is to let people who are unable or unwilling to meet face to face practise collaborating with each other over a computer network.

To do this, CIMBLE's software creates a virtual world for up to six participants. Each acts via an electronic representative known as an avatar. A participant sees the world (including the other players' avatars, which appear on screen as cartoon-like images of men and women) from his own avatar's point of view. Any other characters that the avatars might interact with are played by a moderator, who also acts as Big Brother, overseeing and monitoring the activities of the group and steering things in a suitable direction.

The CIMBLE software allows the avatars to walk around and manipulate objects in the virtual world (opening doors, for example) at the click of a mouse. It also lets avatars (and hence the participants) talk to one another. Most conversations are assumed to be in the open, and can be heard by everybody. But true office Machiavellis will be pleased to learn that private chats are also possible, since the software can work out who is within earshot of whom, and will transmit sound only to those who should be able to hear it.

So far, Dr. Testani and her colleagues have devised two exercises in their new electronic world. One simply brings the participants together around a virtual conference table and lets them chew over an agenda provided by the moderator. The second, however, is more sophisticated. The participants are deemed to be working for a civil-engineering firm, and are sent off to the proposed site of a new bridge to settle a dispute with local residents and officials. After a long car ride and a night in a hotel (all depicted in loving detail by CIMBLE's software), they meet the irate local and try to mollify them. A successful outcome, allowing the bridge to go ahead, is greeted by an on-screen display of virtual fireworks.

At the moment, CIMBLE is being evaluated using the institute's high-speed (100 megabytes a second) local-area network. If it passes muster there, the next stage will be to modify it for use on the public Internet (which works at between a tenth and a hundredth of that speed), so all that will be needed to make the virtual office indistinguishable from a real one are virtual daggers to allow the avatars to stab one another in the back.

Questions 1-12

Complete the following summary of the reading passage. Choose NO MORE THAN THREE WORDS from the passage for each answer.

Dr. Testani of Franklin Institute designed a software called CIMBLE which __1__ CADETT Interactive Multi-user Business Learning Environment. This virtual world is used to mimic __2__ and has made it possible for __3__ people to practise collaborating with others over a computer network. __4__ is represented by an avatar, and their activities are monitored by __5__. With this software, __6__ can talk to each other __7__ as well as have __8__ in the virtual world because the software will __9__ only to people who should be able to hear it. Two exercises have been devised up till now. One allows the participants to think over __10__, while the other requires them to __11__ over the construction of a new bridge.

After evaluation by the institute, the software will undergo modification to be put into use __12__.

Exercise 7

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 20 minutes.

Our Dying Seas

The marauder first appeared as a bright blip on a radar screen aboard a Canadian Forces Aurora surveillance aircraft. The plane had been in the air for three hours, patrolling the Pacific Ocean near the international date line northwest of Hawaii. As dawn broke on the June morning, the four-engine plane dropped down for a closer look. Recalls navigator Eric Johnstrude: "We came in at about 200 feet on this guy and noticed a whole lot of floats in the water. The floats led us straight to a white vessel, about 150 feet long, which fit the description of a drift-net boat."

Canadian authorities relayed that suspicion to the US Coast Guard, which dispatched a cutter to intercept the vessel. After a two-week chase, the cutter's crew finally boarded the Cao Yu 6025, a stateless ship, south of Japan. In the hold, they found damning evidence: 110 tons of tuna and shark fins, and a drift gillnet almost 20 kilometres long — an indiscriminate killer of marine life banned on high seas under an international agreement.

Out of sight, and mostly out of mind, the oceans are under siege. Scientists from around the world are reporting global disturbances in the seas that threaten to bring Richard Cashin's grim warning home to every Canadian household. From the polar seas to the tropics, fish populations have collapsed or teeter on the brink. In a third of the Pacific, plankton that form the foundation of the marine food chain are vanishing. In every corner of the planet, increasing temperatures are obliterating some species, while driving others into unfamiliar waters. As science scrambles to make sense of uneven data, evidence points to an alarming conclusion: the sea, the cradle of life, is dying.

The killers are numerous. The most obvious, global overfishing, harvests 70 per cent of the world's species faster than they can reproduce themselves. But the scientific community is not even sure that is the worst menace to the seas. Other major threats: human pollution, including an estimated 700 million gallons of toxic chemicals dumped into the sea each year, and global warming, widely attributed to industrial production of so-called greenhouse gases, which appears to be affecting ocean temperatures.

Sharply pricier seafood is only the mildest consequence; others are far more serious. In many parts of the world, fishing jobs have disappeared. On Canada's East Coast, 26,000 unemployed former fish workers drew income from the federal government's Atlantic Groundfish Strategy — 15,000 from Newfoundland alone — until its $1.9 billion in funding ran out in August. Far worse, developing countries dependent on marine protein confront the risk of mass starvation. In many regions, rival national claims to the seas' diminishing harvest hold potential for armed conflict. More terrifying still is the specter of ecological Armageddon, as the oceans lose the capacity to generate the oxygen on which life itself depends.

For too many species, extinction has already come. Half a century ago, 600,000 barndoor skate swam North America's Atlantic seaboard. Never intentionally fished, they, nonetheless, frequently became ensnared in nets or on hooks. By the 1970s, scientists could find no more than 500 skate throughout its previous range. Now, they can't find any. "If bald eagles were as common as robins and then disappeared, someone would notice," says biologist Ransom Myers of Hallifax's Dalhousie University. "In the ocean, no one knows. No one cares."

Belatedly, a handful of governments and others have begun to notice, to care and to act, moving tentatively to rein in the worst abuses of the seas. The patrol that spotted the Cao Yu was one of six that Canada donates each year to enforce an international ban on drift nets, blamed for killing dolphins, sharks, turtles, and seabirds, in addition to their intended catch. On September 1, the federal government designated two protected marine habitats at Race Rocks and Gabriola Passage, British Columbia — the first in a promised chain of preserves in Canadian waters where fishing will be banned. On the same day, an international commission concluded three years of study by urging coastal nations to bury their differences and form a world authority to regulate fishing beyond the 200-mile (370-kilometre) economic zones of individual states.

Individuals and small groups are also taking action where they can. In Toronto, some chefs have agreed to remove swordfish from their menus out of concern for their rapidly declining numbers. In British Columbia, schoolchildren are "adopting" streams where salmon spawn, labouring to remove debris and restore the critical habitats. But such bright spots are few. "The sea is in real trouble," says Elliot Norse, founder of the Redmond, Washington-based Marine Conservation Biology Institute, "much more than we previously thought. There is major disruption even in the deep ocean." In January, 1,600 marine scientists from 65 countries joined Norse in signing a joint appeal to governments "to take decisive action to stop further irreversible damage to the sea's biological diversity and integrity."

Critical to the survival of marine life is plankton, the tiny plants and animals that normally teem near the ocean's surface, providing food for predators from salmon to seabirds. Off the US west coast, scientists have detected a 70 per cent drop in zooplankton (the animal variety) since 1950. The same decades have witnessed an even more staggering decline in the number of migratory sooty shearwaters, seabirds that dine on the tiny creatures. "It used to be the most abundant bird in the California current, by far," says biologist John McGowan of the Scripps Institution of Oceanography at San Diego. Now, 90 per cent are gone.

Just how far, wide and deep the damage goes is a matter of speculation. The ocean is a big place, full of myriad creature, whose complex relationships mankind has barely begun to identify, let alone understand. To study it, scientists must look beneath its surface, which is expensive. In developing countries, which take three quarters of the world's fish, science of any kind is a luxury. In Canada, which exports $3 billion worth of seafood a year, research until recently focused almost exclusively on ways to find, count and catch more fish. "In doing that," acknowledges Richard Beamish, a leading researcher at the federal government's Pacific Biological Station at Nanaimo, British Columbia, "we sacrificed the opportunity to understand the mechanisms in the ecosystem better."

The limits of scientific knowledge leave some of the most critical questions without any answer. One of those is whether forces big enough to wipe out seven tenths of the zooplankton in the northeast Pacific are also affecting the ocean's capacity to generate one half of the oxygen released into the biosphere each year. The crucial gas is freed from carbon dioxide as a by-product of the same process by which plants capture carbon for growth: photosynthesis. "We think that photosynthesis and the carbon system have been affected in the east one third of the Pacific," says Scripps' McGowan. "But we can't say, because we don't have the measurements."

Knowledgeable assessments of the sea's future often seem to have an apocalyptic air. Elisabeth Mann-Borgese, Hallifax-based chairwoman of the International Ocean Institute, lays most of the blame for the seals' sickness on humans — who will ultimately pay the cost. "What we are doing is killing ourselves," she says soberly. "It is the human race that will die out if we don't do something." Federal Fisheries and Oceans Minister David Anderson, under fire in the fishing community for the restrictions he has imposed on catches, also struck a dire note when interviewed by Maclean's. "We have a major crisis in the oceans," Anderson said. "If we don't start undertaking effective measures, internationally, we are dead."

Questions 1-9

Complete the summary using words or phrase from the box below. Write your answers in boxes 1-9 on your answer sheet.

NB *There are more words than spaces so you will not use them all.*

The oceans are dying. Throughout the world's seas, fish populations are on the verge of ___1___. The ___2___ the oceans face are numerous, including global overfishing, human pollution and global warming ___3___ by industrial production of greenhouse gases. The deterioration of the seas has led to serious ___4___, such as an ___5___ in the number of the unemployed, mass starvation in developing countries, and inability of the oceans to ___6___ oxygen. To avert the crisis, governments, groups and individuals are making ___7___ attempts to ___8___ the wrong uses of the seas. Despite their efforts, some of the critical problems still cannot be solved, for they are beyond man's __9__.

consequences
extinction
amount
increase
produce
threats
stop
limits
scientific knowledge
belated
caused

Questions 10-14

Complete the sentences by using NO MORE THAN THREE WORDS from the passage.

10. The use of the drift gillnet is banned on high seas because it is sea life's ____________ killer.
11. ____________ are regarded as the foundation of the marine food chain.
12. Loss of jobs and ____________ in developing countries dependent on fishing are among the possible consequences.
13. Limited harvests many lead to ____________ conflict among nations.
14. A world authority should be established to regulate fishing beyond ______ ______ of individual states.

Exercise 8

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Ethics and Archaeology

The growing importance of ethical considerations is transforming archaeology

The first-world-war battlefields of Belgium and France are dangerous places where, even today, unexploded shells lurk, making excavation a potentially lethal activity. But as archaeologists pick up their trowels, they must consider more than their personal safety. For the trenches, dug-outs and tunnels, many containing human remains and personal belongings, are ethical minefields too. In a paper in this month's *Antiquity*, Nicholas Saunders, an anthropologist at University College, London, says that archaeologists on these battlefields face a concentration of all the issues that have concerned archaeology in the past ten to fifteen years.

These ethical concerns fall into three broad areas. First, there is the question of how to treat human remains. Over the past few years, archaeologists have often come into conflict with indigenous peoples over the custody and handling of excavated human remains. In Belgium and France, the situation is particularly complex because the allied armies included soldiers from a variety of faiths and ethnicities, including Africans, Indians, Australians and Native Americans, all of whose traditions may prefer to treat remains differently.

Next is the question of ownership of artefacts. In the case of first-world-war sites, local people armed with metal detectors routinely collect medals and other memorabilia. The sale of such items, says Dr. Saunders, has provided an important source of income ever since refugees first returned to the area after the conflict. Archaeologists, though, regard such activities as looting. Around the world, the general question of who has the first claim on buried items — local people, the descendants of the original owners, or archaeologists, is deeply controversial.

A third ethical problem concerns the preservation of sites. Should battlefields be left alone as memorials, redeveloped for tourism, or preserved for the archaeologists of the future? Archaeologists increasingly consider the third option: in recent years, they have become more selective about what and where they dig, so that they do not preclude investigations by subsequent generations.

In short, archaeologists' investigations frequently pit their interests against those of other people, and the concerns of the present against the possible concerns of the future. As ethical considerations come to matter more, there has been a change in the way the public sees archaeologists, and the way archaeologists see themselves. We went through a period when we thought "Hey, we're scientists, we should be the number one priority here," says William Lipe, an archaeologist at Washington State University in Pullman. But most of us have now come to see it differently.

Archaeology is now changing dramatically, says Karen Vitelli, an archaeologist at Indiana University. Dr. Vitelli also chairs the ethics committee of the Society for American Archaeology (SAA) and is editor of a forthcoming book on archaeological ethics. She was one of the first archaeologists to integrate the study of ethics into archaeological training, and it has now, she says, become a standard part of many degree courses. At the same time, archaeological societies around the world (including the SAA) have adopted codes of ethics to regulate their members. What has brought about this transformation?

Skeletons in the Closet

Ethics and archaeology began to collide relatively recently. The modern discipline traces its roots back to the gentleman amateurs of the early 19th century, who brought statues, columns, mummies and trinkets back as souvenirs from their travels around the Mediterranean. Subsequent generations of archaeologists have tended to regard men such as Giovanni Belzoni, a one-time circus strong-man who shipped Egyptian antiquities back to the British Museum in London, as little better than tomb-robbers.

By the early 20th century, however, archaeologists had begun to adopt the methodology of science. Increasing emphasis was placed on the accurate measurement and description of sites and publication of results in archaeological journals. Technological advances such as the advent of radiocarbon dating led to further refinements, and the few archaeology movement of the 1960s promoted quantitative methods such as statistical analysis. The transformation of archaeology, from tomb-robbing by amateurs into a coherent scientific discipline, was complete.

Paradoxically, the ethical arguments over the treatment of human remains, the ownership of artefacts and responsibility to future generations, all stem in part from archaeology's new-found scientific authority. Having eschewed their dubious forebears, archaeologists reinvented themselves as respectable scientists in search of truth. Who could argue with that?

Questions 1-7

Complete the following summary of the reading passage. Choose NO MORE THAN THREE WORDS from the passage for each answer. Write your answers in boxes 1-7 on your answer sheet.

Ethical considerations have become increasingly important in archaeology. There are generally three categories of __1__: how to treat human remains, who owns __2__ and how __3__ should be conserved. The growing importance of such concerns has changed the way how __4__ views archaeologists and also how the archaeologists view themselves, who used to see themselves as __5__. Around the world archaeology is changing dramatically. The study of ethics has become part of __6__. Throughout the world, codes of ethics have been __7__ to regulate the members of archaeological societies.

Questions 8-10

Do the following statements agree with the view of the writer in the reading passage? In boxes 8-10 on your answer sheet write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement does not agree with the view of the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

8. In the early 19th century, European scientists brought back statues, columns and mummies from their travels.

9. The methodology of science was adopted in archaeological research in the early 20th century.

10. Radiocarbon dating appeared in the 1960s.

Unit Five

YES/NO/NOT GIVEN

YES/NO/NOT GIVEN là một dạng đề có tỷ lệ ra đề rất cao. Điều cần đặc biệt chú ý là cho dù trong cùng một bài thi, loại đề này cũng có thể có hai dạng: đó là YES/NO/NOT GIVEN và TRUE/FALSE/NOT GIVEN. Chỉ cần bất cẩn một chút là sẽ xem hai dạng đề này (trên thực tế là các hình thức thể hiện khác nhau của cùng một dạng đề) là một, đều dùng YES/NO/NOT GIVEN để trả lời. Nếu phải dùng TRUE để trả lời mà trên bài làm viết YES, câu này sẽ không được tính điểm, người chấm bài thi sẽ không đổi YES thành TRUE hoặc đổi NO thành FALSE. Đương nhiên, NOT GIVEN giống nhau.

Xin kể một câu chuyện: Trước kia có một học viên làm việc ở một cơ quan tình báo thuộc Bộ công an học môn đọc IELTS. Công việc thường ngày của anh ta chính là xem qua các tài liệu có giá trị lịch sử của nước ngoài, khả năng đọc của anh ta trội hơn các học viên khác rất nhiều. Khi ấy có một bài đọc, nội dung là quét hình nội dung của sách, báo v.v., sau đó dùng phần mềm nhận dạng chữ viết, cuối cùng máy tính dựa vào số lần xuất hiện của một số từ đơn nào đó và một số nhân tố khác để viết ra bản tóm tắt. Tựa của bài đọc đó là Reading Machine. Vì có khả năng đọc siêu việt, nên học viên này được các bạn học đặt cho biệt danh là "Reading Machine". Tốc độ đọc của anh ta không những nhanh, mà tỷ lệ chính xác cũng rất cao. Với ba bài đọc dài, đề thi gồm 40 câu dạng học thuật, anh ta thường có thể hoàn thành không quá 50 phút, hơn nữa có thể đảm bảo tỷ lệ chính xác trên 35 câu. Biệt tài của anh ta là trong quá trình đọc có thể cảm nhận được những "điểm" mà người ra đề sẽ dùng để ra đề. Nói cách khác, khi đọc anh ta có thể cảm nhận mức độ quan trọng v.v. của các thông tin được truyền đạt trong nội dung bài đọc, và đó chính là những gì mà chỉ có người có khả năng đọc tiếng Anh giỏi mới có thể cảm nhận được.

Một bài đọc được tạo thành từ các từ đơn, câu và các đoạn văn. Đồng thời, bài đọc cũng do các "điểm" của các thông tin được truyền đạt tạo thành. Những "điểm" này (ví dụ như nguyên nhân, kết quả, thời gian, địa điểm v.v. của một sự kiện nào đó) là cốt lõi của một bài viết, là nguyên nhân khiến tác giả muốn viết bài viết này. Những gì người ra đề nhắm vào cũng chính là những "điểm" này.

Dạng đề YES/NO/NOT GIVEN (hoặc TRUE/FALSE/NOT GIVEN) chính là kiểm tra khả năng hiểu những "điểm" này của học sinh. Những người không có nền tảng tiếng Anh vững chắc chỉ nhìn thấy từ đơn, câu và không nhạy cảm với các "điểm". Nói cách khác, họ "chỉ thấy cây, nhưng không thấy rừng".

Hiroshima Bomb May Have Carried Hidden Agenda

A The US decision to drop atomic bombs on Hiroshima and Nagasaki in 1945 was meant to kick-start the Cold War rather than end the Second World War, according to two nuclear historians who say they have new evidence backing the controversial theory.

B Causing a fission reaction in several kilograms of uranium and plutonium and killing over 200,000 people 60 years ago was done more to impress the Soviet Union than to cow Japan, they say. And the US President who took the decision, Harry Truman, was culpable, they add.

C "He knew he was beginning the process of annihilation of the species," says Peter Kuznick, director of the Nuclear Studies Institute at American University in Washington DC, US. "It was not just a war crime; it was a crime against humanity."

D According to the official US version of history, an A-bomb was dropped on Hiroshima on 6 August 1945, and another on Nagasaki three days later, to force Japan to surrender. The destruction was necessary to bring a rapid end to the war without the need for a costly US invasion.

E But this is disputed by Kuznick and Mark Selden, a historian from Cornell University in Ithaca, New York, US. They are presenting their evidence at a meeting in London on Thursday organized by Greenpeace and others to coincide with the 60th anniversary of the bombings.

F New studies of the US, Japanese and Soviet diplomatic archives suggest that Truman's main motive was to limit Soviet expansion in Asia, Kuznick claims. Japan surrendered because the Soviet Union began an invasion a few days after the Hiroshima bombing, not because of the atomic bombs themselves, he says.

G According to an account by Walter Brown, assistant to the US Secretary of State James Byrnes, Truman agreed at a meeting three days before the bomb was dropped on Hiroshima that Japan was "looking for peace". Truman was told by his army generals, Douglas Macarthur and Dwight Eisenhower, and his naval chief of staff, William Leahy, that there was no military need to use the bomb.

H "Impressing Russia was more important than ending the war in Japan," says Selden. Truman was also worried that he would be accused of wasting money on the Manhattan Project to build the first nuclear bombs, if the bomb was not used, he adds.

I Kuznick and Selden's arguments, however, were dismissed as "discredited" by Lawrence Freedman, a war expert from King's College, London, UK. He says that Truman's decision to bomb Hiroshima was "understandable in the circumstances".

J Truman's main aim had been to end the war with Japan, Freedman says, but adds that, with the wisdom of hindsight, the bombing may not have been militarily justified. Some people assumed that the US always had "a malicious and nasty motive", he says, "but it ain't necessarily so."

Do the following statements agree with the writer of the above reading passage? Please write

YES	*if the statement agrees with the writer;*
NO	*if the statement does not agree with the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

1. The two atomic bombs killed more than 200,000 people in Hiroshima and Nagasaki.
2. Kuznick and Selden hold contradicting views over the issue of Hiroshima bomb.
3. Kuznick and Selden work at the same university.
4. Japan is the only country that has been attacked with atomic bombs.
5. According to the American government, A-bombs were used to defeat Japan.
6. According to Kuznick, Japan surrendered because of the Russian army rather than the A-bombs.
7. According to Walter Brown, US army generals were against the use of A-bombs.
8. Walter Brown was the Secretary of State when Truman was the President of America.
9. Selden believes that the sole reason for Truman to use A-bombs was to impress the Soviet Union.
10. Freedman attended the conference organized by Greenpeace in London.

Câu 1: Đáp án là YES. Nội dung khớp với câu thứ nhất trong đoạn B.

Câu 2: Đáp án là NO. Hai học giả này mặc dù đến từ các trường đại học khác nhau, nhưng có quan điểm giống nhau về việc hai quả bom nguyên tử ném xuống Nhật, tức là mục đích ném bom không phải buộc Nhật đầu hàng mà là để chứng tỏ thực lực với Liên Xô.

Câu 3: Đáp án là NO. Kuznick đến từ American University, còn Selden đến từ Cornell University.

Câu 4: Đáp án là NOT GIVEN. Cách nói này (Nhật là quốc gia duy nhất đã từng chịu sự tấn công của vũ khí hạt nhân) có thể là sự thật, nhưng không được đề cập trong bài đọc.

Trong bài không nói các nước cũng từng chịu hoặc chưa từng chịu sự tấn công bằng hạt nhân. Phán đoán về một cách nói nào đó không thể dựa vào hiện thực cuộc sống hoặc quan điểm cá nhân mà phải dựa vào nội dung bài đọc.

Câu 5: Đáp án là YES. Câu đầu tiên trong đoạn D khớp với cách nói này. "the official US version of history": Lời giải thích về lịch sử của các quan chức Mỹ cũng chính là thái độ của chính phủ Mỹ.

Câu 6: Đáp án là YES. Cả đoạn F đều là quan điểm của Kuznick. Câu thứ hai trong đoạn F khớp với câu này.

Câu 7: Đáp án là YES. Trong chiến tranh, Walter Brown làm trợ lý cho bộ trưởng ngoại giao Mỹ James Byrnes. Theo cách nói của ông ta, tổng thống Mỹ Truman biết Nhật đang "tìm kiếm hòa bình"; các tướng lĩnh Mỹ đã bày tỏ ý kiến với tổng thống rằng không cần thiết phải dùng bom nguyên tử. "there was no military need to use the bomb" hoàn toàn có thể hiểu là: Các tướng lĩnh phản đối việc sử dụng bom nguyên tử.

Câu 8: Đáp án là NO. Walter Brown không phải là bộ trưởng ngoại giao. Người làm bộ trưởng ngoại giao Mỹ là James Byrnes. Walter Brown đã từng làm trợ lý cho James Byrnes.

Câu 9: Đáp án là NO. Từ sole trong câu hỏi trái ngược với ý nghĩa diễn đạt trong nguyên văn. Qua đoạn H có thể thấy, Truman sử dụng bom nguyên tử còn vì một nguyên nhân khác: Tốn nhiều tiền như thế để làm cuộc nghiên cứu vũ khí hạt nhân, chế tạo ra vũ khí hạt nhân mà không sử dụng, sợ người khác nói rằng lãng phí tiền bạc.

Câu 10: Đáp án là NOT GIVEN. Kuznick và Selden đã tham dự cuộc hội nghị được tổ chức ở Luân Đôn. Freedman – người có ý kiến trái ngược với họ có tham dự hay không, trong bài không đề cập đến.

Một số học sinh cho rằng phần lớn các câu YES và câu NO có sự khác biệt rõ ràng, nhưng giữa các câu NO và câu NOT GIVEN tồn tại một khoảng cách mập mờ, khó phán đoán. Đây quả thật là một hiện tượng phổ biến. Các học sinh tất nhiên sẽ hỏi: Có quy tắc nào để phán đoán NO/NOT GIVEN không? Các giáo viên, tài liệu giảng dạy khác nhau sẽ có những đúc kết khác nhau, nhưng các quy tắc tổng kết được thường chỉ thích hợp dùng cho các bài tập mà họ cho học sinh làm. Đổi bài thì khác, những quy tắc đó chưa hẳn có ích. Nếu quả thật có các quy tắc, thì đó chính là xem ý diễn đạt trong câu hỏi có được đề cập trong bài đọc hay không. Không được nói đến là NOT GIVEN, nói đến nhưng trái ngược với ý của bài là NO.

Khi làm loại đề này, một số học sinh cảm thấy bị ức chế, do đó nghi ngờ tính chính xác trong quan điểm của người ra đề, thậm chí nghi ngờ cả trí lực của người ra đề. Thật ra, trình độ tiếng Anh của người ra đề cao hơn trình độ của người làm bài rất nhiều. Người ra đề có nhiều thời gian để đọc nguyên văn, còn người làm bài không hề có thời gian "thư thả"; đề cho người làm bài thi thường trải qua "thử nghiệm", tức là đã được thử nghiệm trong một nhóm người nào đó (tiếng Anh không phải là tiếng mẹ đẻ, có khả năng đọc khá tốt), đồng thời qua chỉnh sửa, gần như không còn sơ hở nào để công kích. Vì vậy, nếu bài làm khác với đáp án tiêu chuẩn, rất có thể là do không hiểu toàn diện.

Exercise 1

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 20 minutes.

The World of the Flat-footed Fly

George Poinar has been fascinated by amber, and the insects embedded in it, since childhood. Now a professor of entomology at the Berkeley Campus of the University of California, he has successfully combined these interests to produce *Life in Amber*, a scholarly and yet very readable book. In it he tells the story of this curious, almost magical substance and the unique record of fossilized life that became trapped and entombed in the sticky resin as it oozed from the forest trees of the ancient past.

Amber has been endowed with special worth from prehistoric times. Adornments of amber have been found that date back as far as 35,000 B.C., and in 1701, King Frederick I of Russia commissioned an entire room made of amber as a gift for Peter the Great of Russia. Historically, that probably represented the peak of value for amber. Since then our appreciation of it as a decorative material worth its weight in gold has declined somewhat. In Victorian times, amber beads had something of a renaissance as an adornment. It now holds greater value as a potential store of fossil DNA.

Scientific interest in amber has also fluctuated. The embedded small organisms, particularly insects but also frogs and feathers, have always been part of amber's allure. In the first century A.D., Pliny noted that amber was the discharge of a pine-like tree, originated in the north and often contained small insects. It was not until the 19th century that collection of the amber flora and fauna really got under way. The largest hoard was of Baltic origin, amassed by Wilhelm Stantien, an inn-keeper, and Moritz Becker, a merchant. They took their collecting seriously and used mining techniques to extract pieces of amber from clays of Tertiary age that had formed during the Eocene, 38 million years ago, in the Samland peninsula, near Kaliningrad (the former Kbnigsberg) on the Russian Baltic seaboard. Their efforts resulted in about 120,000 amber-embedded animal and plant fossils. These were housed in the Geological Institute Museum at Kbnigsberg University. Unfortunately, despite being dispersed for safety during the Second World War, much of this amazing collection was lost.

Although the depth of this unique view of the insect life in Baltic forests of Eocene age is sadly no longer available in a single collection, we can see something of it. There are still large collections of Baltic amber in public museums around the world but even in total they do not amount to much more than that one unrepeatable collection. The Natural History Museum in London has a "mere" 25,000 specimens.

Popular misconceptions about amber exist; for example, suggesting that it is the fossilized resin of coniferous trees from the Baltic region, and that its abundance is the result of some unusual condition of these ancient trees. It is true that an astonishing amount of amber has been recovered from this region. However, the most likely candidate to have produced the Baltic amber is an araucarian tree similar to the living *Agathis* from New Zealand, which secretes resin. This could well accumulate in this order of magnitude, given the geological time scale of hundreds of thousands, if not millions of years. And, as Poinar discusses, the Baltic region was only one of many different areas, on a worldwide scale, from the Dominican Republic, which is his own favourite hunting ground, to China and Romania, that produced amber in Tertiary times. Furthermore, amber resin producing trees are shown to have an extended geological history extending back to Cretaceous times, more than 100 million years ago and possibly as far back as the Carboniferous (more than 300 million years ago). Many of these older ambers have not been rigorously investigated with modern techniques but Poinar has collected all the available published knowledge on their biological content.

If you want to know about the record of the *Mycetophagklae* (hairy fungus beetles) or the *Platypezidae* (flat-footed flies) in amber, this is where to look. Amber does provide a uniquely well-preserved view of the past. And we can see them all in amber from the parasitic wasp larva and its spider host to the flies the spider trapped. Poinar's book is a slightly curious mixture of academic taxonomic treatise on the biology of amber and a fascinating semi-popular account of how, where and when amber has been produced. But it is by far the best available, well-written and illustrated by a biologist, who is an active and major contributor in the field.

As the last chapter on the implications of this type of preservation and the prospects for palaeobiological research intimates, amber is perhaps only just beginning to show its worth.

Since Poinar wrote *Life in Amber*, two independent teams of American investigators have extracted and sequenced the oldest known DNA from insects trapped in Dominican amber, more than 30 million years ago. Poinar was one of them.

Questions 1-14

Do the following statements agree with the view of the writer of the passage? Please write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement does not agree with the view of the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example:	Answer:
George Poinar is a contemporary scientist.	*YES*

1. *Life in Amber* is a book written in the 18th century.
2. King Frederick and Peter the Great lived in the same historic period.
3. King Frederick's time was earlier than Victorian time.
4. Peter the Great lived in the same historic period as Pliny did.
5. Wilhelm Stantien died earlier than Moritz Becker.
6. The Eocene is a geological era that is earlier than Cretaceous times.
7. Most of the amber items in modern museums were found in the Baltic region.
8. Compared with what the Geological Institute Museum at Kbnigsberg University used to house, the Natural History Museum in London has a small collection of amber fossils.
9. Amber was more valuable in Victorian times than in the times of Peter the Great.
10. It is wrong to believe that amber is the fossilized resin of coniferous trees.
11. George Poinar has worked in the Dominican Republic.
12. Almost no amber has been found in New Zealand.
13. Though there are ambers formed millions of years ago, scientists have concentrated their attention on ambers that were formed in later periods.
14. Scientists have shown their interest in amber for hundreds of years.

Exercise 2

In this exercise, you will read a passage and answer the questions that accompany the passage. Some of the questions will come before the passage; others will come after the passage. The suggested time for reading the passage and answering the questions is 20 minutes.

Questions 1-8

The following reading passage has nine paragraphs A-I. Choose the most suitable headings for paragraphs B-I from the list of headings below. Write the appropriate numbers (i-xi) in the spaces provided.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i) Fission and fusion
(ii) Dangers of nuclear contamination
(iii) Energy from the sun
(iv) Uncontrolled and moderated nuclear reactions
(v) Energy from food
(vi) The advantages of nuclear energy
(vii) The nuclear fission chain reaction
(viii) Other forms of energy
(ix) Nuclear fusion
(x) Fossil fuels
(xi) The nuclear energy square

Example:	Answer:
Paragraph A	*iii*

1. Paragraph B ________
2. Paragraph C ________
3. Paragraph D ________
4. Paragraph E ________
5. Paragraph F ________
6. Paragraph G ________
7. Paragraph H ________
8. Paragraph I ________

Energy, Fission and Fusion

A Almost all the energy that living things make use of comes in the beginning from the sun. The chief exception is the gravitational pull of the earth itself, and of the moon upon the waters of the earth. The sun gives out enormous quantities of energy in the form of radiation — rays of light and other forms of energy.

B Green plants have the power, through the process called photosynthesis, to change the energy of sunlight into chemical energy. This is stored in the plant in the form of organic molecules. Some of the plants are eaten and the stored energy used by herbivorous animals — or by human beings. Human beings are omnivorous, that is their food and therefore, their energy can come from either plant or animal sources. But that energy originated in the sun.

C To satisfy human needs, other kinds of energy are needed — mechanical, driving and heating. The energy for heating, or for driving heat engines, usually comes from a fuel and most fuels were once living things. Fuel obtained in this way, with the exception of wood and other fresh organic matter, is called fossil fuel and includes oil, natural gas and coal. All of these are the very ancient buried remains of animal or plant life. They are finite and the processes by which they were made are not repeatable. They are yet another form of solar or sun energy.

D The energy given out by the sun is created by the process known as nuclear fusion. *Fusion* means "joining together". The opposite process is nuclear *fission*, meaning "splitting apart" or "dividing". If either fission or fusion takes place quickly, the result is a great and sudden release of energy — an explosion, in fact. Both kinds of nuclear event can be created on earth but so far the only one that can be slowed down and controlled is fission.

E Nuclear fission is the splitting of the nucleus of an atom. Only a few elements are suitable for use in this way, the most important ones being Uranium-235, Uranium-233 and Plutonium-239. When a nucleus of one of these elements is struck by a free neutron, it breaks down into two lighter nuclei which fly apart at high speed, colliding with surrounding atoms. Their kinetic energy is converted into heat energy. At the same time, two or three free neutrons are released and one of them enters the nucleus of a neighbouring atom, causing fission to occur again; and so on. The reaction spreads very quickly, with more and more heat energy released. This is called a "chain" reaction because the splitting of each nucleus is linked to another, and another and another.

F If this reaction takes place in an atomic bomb, where nothing is done to slow it down, the result is a violent explosion that can destroy a town in a few seconds. Fission can also, however, take place within a construction called a nuclear reactor, or atomic pile. Here the highly fissile material (U-235, U-233, Pu-239) is surrounded by a substance that is non-fissile, for instance graphite. This material is called a moderator. The neutrons lose some of their energy and speed through colliding with the atoms of the moderator. Energy — heat energy — is still created on an enormous scale, but no expansion takes place. The moderator has another function: by slowing down the speed of the free neutrons, it makes it more likely that one of them will collide with the nucleus of a neighbouring atom to continue the chain reaction.

G The chief advantage of nuclear energy is that it does not depend on any local factors. A nuclear reactor, unlike an oil-well or a coal mine, does not have to be sited on top of a fossil-fuel source; unlike the solar energy unit, it does not have to go out of production when the sun is not shining; unlike hydroelectric power, it does not depend on a large flow of water which may be reduced during some seasons of the year. With an atomic power station, the only limiting factor is that of safety.

H In the opposite process, nuclear fusion, two nuclei come together to form a new nucleus of a different kind and this process also releases energy on an enormous scale. Fusion can only occur under conditions of very great heat — at least 50,000,000 degrees Celsius. (The temperature at the centre of the sun is estimated as 130,000,000 degrees Celsius.) A fusion reaction on earth has already been created — the hydrogen bomb. This is an uncontrolled reaction. It is not yet possible to produce a controlled fusion reaction that can be used for the production of useful energy.

I Nuclear energy can be thought of as a kind of square. Three of the quarters of the square are known and used, but the fourth cannot yet be used.

Questions 9-16

Decide if each of the following statements is true or false according to the information provided in the passage. Please write

TRUE	*if the statement is true;*
FALSE	*if the statement is false;*
NOT GIVEN	*if the information is not given in the passage.*

9. The purpose of the moderator is to prevent the escape of dangerous radiation.
10. Few elements are suitable for use as atomic fuel.
11. Fossil fuels cannot last for ever.
12. An atomic power station can supply the same quantity of energy all the year round.
13. The sun's energy is released by the process of nuclear fission.
14. All organic fuels are fossil fuels.
15. A hydroelectric power station can be built anywhere.
16. Graphite is a non-fissile material.

Exercise 3

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 20 minutes.

Will Britain Turn Its Back on Wave Power?

Wave energy research in Britain is under threat again following a report which argues that public funding for large offshore projects should be restricted to a token sum. The report, by the government's Renewable Energy Advisory Group, calls instead for more government investment to develop ways of generating electricity from hydroelectric plants, wind, waste and crops: technologies which have existing markets.

The decision is complicated by the publication of a review of wave energy by the government's Energy Technology Support Unit, which shows that the cost of electricity generated from wave devices has fallen considerably in recent years, and that new designs could make even greater savings.

The wave energy review was not completed in time for the renewables group to consider it. Nevertheless, the group gives offshore wave machines the thumbs down on economic grounds, and suggests that they should be given "no further significant research and development expenditure".

Stephen Salter, professor of engineering design at the University of Edinburgh and a pioneer of wave power, described the group's conclusions as "nonsense". Improvements made over the past decade have brought down the theoretical costs of producing electricity from his departments device, the Edinburgh Duck, to about 16p per kilowatt-hour. A radical redesign to overcome technical problems highlighted by ETSU has further reduced the cost.

Salter is reticent about the scale of these reductions, but ETSU's own computer models are believed to put the cost at around 4p/kWh, similar to the cost of energy from coal and gas.

ETSU's estimates are based on the assumption that all technical problems with a wave device are solved. It stresses that wave energy technology is "relatively immature", and that a great deal of R&D will be needed before a practical offshore machine is built. The best prospects, it says, may lie with radical redesigns of older ideas, such as Salter's Duck, or one of several new designs which promise electricity "at substantially lower costs".

The renewables group makes no recommendations about the most developed wave energy devices — those sited on the coastline. One such machine has been built on the island of Islay by researchers from Queen's University of Belfast. ETSU estimates that it could produce electricity at 6p/kWh.

Trevor Whittacker, who manages the wave energy programme at Queen's, believes that the market for shoreline machines must be developed now. Offshore devices will not be needed for 20 years, he says, but "if you're going to go for serious energy production, you've got to go offshore". He warns that if the basic research is not done now, "you're going to grind to a halt in 10 to 15 years".

A theme running through the group's report is the need to bolster the industries that have grown up over the past two years for generating electricity from, for example, wind and biomass. These markets have grown chiefly because regional electricity companies have been forced to buy electricity from Nuclear Electric and renewable energy producers at an inflated price under the non-fossil fuel obligation.

The NFFO was conceived as a means to keep Nuclear Electric "cash rich", but is proving to be "a useful mechanism" for creating markets in new technologies, says the report. Twidell says that by accident the government has found an ingenious way of forcing the pace of technology. Companies receive a return on their wind turbines, or chicken litter furnaces only when they begin producing electricity. "Once the companies are generating, they want to make the plant more efficient, so the research is very applied and market-oriented," he says.

According to Martin Holdgate, director of the World Conservation Union, and chairman of the renewables group, "the hope is that as the technology becomes proven, it will become an increasingly attractive investment".

The group argues that by 2025, renewables should contribute about 60 terawatt-hours of electricity a year, which is equivalent to one fifth of present annual production. To reach this goal, it says "the government must intervene in the market".

Holdgate argues that Britain's commitment to the Climate Change Convention, signed at the Earth Summit last June, is reason enough for the government to give extra support to technologies that produce no polluting gases. Renewables are also at a disadvantage because the full environmental damage of fossil fuels is not taken into account in their costs.

Despite its optimistic view, the group calls on the government to increase the amount of renewable energy bought under the NFFO to around 1,500 megawatts over the next seven years. This would still leave renewables with only 0.1 per cent of Britain's electricity supply. Environmentalists say this is a pitiable increase.

Questions 1-7

Decide if each of the following supports generating electricity from wave power. Please write

YES — *if the person/institution supports using wave power;*
NO — *if the person/institution doesn't support using wave power;*
NOT GIVEN — *if there is no information about this in the passage.*

Example: The Renewable Energy Advisory Group NO

1. The Energy Technology Support Unit ________
2. Stephen Salter ________
3. Trevor Whittacker ________
4. John Twidell ________
5. The World Conservation Union ________
6. Martin Holdgate ________
7. The British Government ________

Questions 8-16

Do the following statements agree with the view of the writer of the passage? Please write

YES — *if the statement agrees with the view of the writer;*
NO — *if the statement does not agree with the view of the writer;*
NOT GIVEN — *if there is no information about this in the passage.*

Example:	Answer:
Offshore facilities could be built to harness wave power.	*YES*

8. Wind energy is more cost-effective than tidal power.

9. The Edinburgh Duck is not as viable as the machine built by researchers from Queen's University.

10. Producing electricity at the cost of 4p/kWh is the aim of scientists studying wave power.

11. The Renewable Energy Advisory Group feels that the government should give more support to efforts to use renewable energy.

12. Renewable energy includes nuclear energy and energy from wave, biomass and wind.

13. Currently, electricity from renewable resources accounts for 0.1% of the total electricity generated in Britain.

14. Scientists from the University of Strathclyde have been working on a pilot project for a number of years.

15. The NFFO means to generate electricity using nuclear power and renewable energy.

16. Chicken litter is used to generate electricity.

Exercise 4

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 20 minutes.

Talk to Kids about Drugs? Parents Just Don't Do It

When Laura Langanki found extra towels in the laundry smelling lemony fresh, she never dreamed that meant her 13-year-old son was on drugs. "We were going through three to four bottles of air freshener a week," says the 42-year-old nurse from Plymouth, Minn. "Like a fool, I thought my kid was becoming more interested in personal hygiene." Instead, Jake was "huffing" — spraying the contents into towels and inhaling the fumes. By the time his mother found out two years later, he was smoking pot, using acid and crystal methamphetamine, drinking alcohol, and snorting cocaine.

Laura had warned Jake not to try illegal drugs when he was younger and felt sure he got the message. But according to a new *US News* poll, even parents who believe they talk often with their kids about drugs can be mistaken. Of 700 parents and 700 teens surveyed, 1 in 3 parents claimed to talk about drugs "a lot" with his or her teen, while only 14 per cent of teenagers felt they had frequent conversations on the subject with Mom or Dad.

That failure to communicate can have dire consequences. In a 1999 survey of nearly 10,000 parents and teens by the Partnership for a Drug-Free America, teens who received antidrug messages at home were 42 per cent less likely to use drugs. "This may sound like soft advice," says Steve Dnistrian, executive vice president of the group. "But hard numbers quantify that parental communication is the single most important thing we can do to prevent children from using drugs." Indeed, parents received the highest vote of confidence from 63 per cent of the teens polled by *US News*, outranking siblings, teachers, and friends.

Most teens act as if they would rather look after themselves than talk to their parents about touchy subjects like drugs or sex. Don't be deterred, says Rhonda Sykes, associate clinical director for Hazelden Chicago, a drug treatment centre for adolescents. "Teens don't say, 'Thanks for the great advice.' But they do hear what their parents are saying."

No butts. Brandi Domiano, a 16-year-old from Old Forge, Pa., who has never tried cigarettes or alcohol, credits her mother for the choices she makes now. "When I was in sixth grade, my mother would talk to me about how bad drinking and smoking are for me," Domiano says. Her mother also gave her books to read about the harmful effects of drugs.

Experts agree conversations about drugs should begin early and continue throughout adolescence. "Start talking about it when the child is around age 8," says Richard Gallagher, director of the Parenting Institute at New York University Child Study Center. Explain the difference between legal drugs prescribed by doctors and illegal drugs used for fun. Let your children know that other kids may offer these substances to them and that you want them to stay away from drugs because of the harmful effects on health and well-being, Gallagher says.

Many parents will have to do homework on the dangers of drugs. "The only thing worse than no information is bad information," says Paul Ciborowski, professor of counselling at Long Island University. Ask youth counsellors and teachers which drugs are common at your child's school so you can emphasize the right ones. The Internet can provide research on the ill effects of certain drugs (see *www.usnews.com* for links).

Resist the temptation to lecture. Ask lots of questions, and listen to your child's opinions and feelings. And make sure your kids get the message that you're talking about the topic because you're concerned and you want them to be safe.

Kids may fire back with the dreaded question: "Did you do drugs when you were young?" "No need to let it all hang out," Ciborowski says. Be honest, but don't spell out everything. Stress lessons you learned, and talk about people you knew who had a hard time because they used drugs. "Real stories of people who were separated from their families or had to do jail time are what keep me off drugs," says Thomas Brennan, 16, of New York City.

Parents should also be warned not to assume that all kids use drugs. According to the latest findings from the University of Michigan Institute for Social Research, 55 per cent of high school seniors say they have tried illicit drugs. In the past year, close to 40 per cent smoked marijuana, almost 6 per cent used inhalants, 8 per cent took LSD, 6 per cent used cocaine, 1 per cent took heroin, and close to 6 per cent say they used MDMA, also known as Ecstasy.

Conveying the idea that all kids use drugs may make your child feel pressure to join in. And parents aren't the only ones guilty of exaggerating; 25 per cent of the teenagers in our poll said most teens use drugs on a regular basis. But only 8 per cent said close friends are frequent users.

Ultimately, your child will decide whether to try drugs, and even the best parents cannot always prevent it. But don't give up. Once Laura Langanki became aware of Jake's drug use, she battled back, spending her savings to get him into a residential rehabilitation programme. At 18, he just celebrated his 18th month of sobriety. When asked to complete an essay assignment on a significant person in his life, he chose to write about his mom.

Questions 1-12

Do the following statements agree with the view of the writer of the passage? Please write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement does not agree with the view of the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example: Answer:

Richard Gallagher feels that education on drugs should start before children reach their teens. *YES*

1. Jake's case is an example of parents' ignorance and negligence.
2. According to a *US News* poll, a third of the teenagers surveyed thought their parents talk a lot with them about drugs.
3. What parents have done to keep their child away from drugs is not adequate.
4. School education on the dangers of drugs is the most effective way to keep children away from drugs.
5. Teenagers become aware of sex issues through communication with their parents.
6. Brandi's case is an example of effective communication between parents and children.
7. Paul Ciborowski feels that parents should know more about drugs before they can talk with their children about the issue.
8. Parents' lecturing on the issue of drugs is very effective.
9. Paul Ciborowski feels that parents should lie about their own drug-using history when talking with their kids.
10. Ecstasy is worse than crystal methamphetamine because it's more addictive.
11. Parents are likely to exaggerate the picture of drug use in schools.
12. For most children, their first try of drugs was through their close friends.

Exercise 5

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

A New Learning Tool

Students at 62 large university campuses across the United States can take heart: They may never have to take notes in a lecture again.

An upstart Internet venture calling itself *http://www.studentu.com* is hiring students this semester and paying them to take notes in as many as 50 core courses per campus.

The note-takers post their jottings electronically, within 24 hours, on a central website.

Among the dozens of notes already listed are those taken Tuesday during Professor John Syer's course on world politics at California State University in Sacramento and on Aug. 24 during Professor Robert Schwebach's lecture on financial markets at Colorado State University.

The service, which first went on-line Wednesday, is free.

And the stenographers, most of them hired through their fraternities and enrolled in the courses, are paid $300 a semester to open their notebooks to the world.

The creator of the site, Oran Wolf, a 27-year-old graduate of the University of Texas at Austin, who hopes to earn a profit partly through advertising, said he started the service to help students augment their own notes or to help them catch up after a sick day.

But he conceded that his offerings could be abused by those with less legitimate excuses, like chronic oversleeping or lingering hangovers.

"I definitely don't believe students should skip class," Mr. Wolf said this week from his Houston office, as he admitted that he, too, on occasion, had done just that.

"It is important for them to attend the class, use this information as supplements to the course and if they do that, they are going to get A's."

There is no shortage of critics who believe that the arrival of Mr. Wolf's venture — along with other websites that sell sample term papers and synopses of great books — signals nothing less than the erosion of liberal education, if not civilization.

But Mark Edmundson, a professor of English at the University of Virginia, one of the schools where Mr. Wolf has set up shop, thinks the problem lies more with universities — and their reliance, often for financial reasons, on 300-student lecture courses — than on those trying to beat the system.

"There's something sleazy about students taking notes and selling them on the web," Mr. Edmundson said.

"But if you can buy the notes and satisfy the course requirements, maybe the course should have been distributed as a book, rather than having this charade of somebody standing up and going through a lecture that, for all purposes, doesn't change from year to year, and doesn't allow students the possibility of discussion."

Peter Wood, a professor of anthropology and the associate provost at Boston University, which is also on Mr. Wolf's list, said the university might consider taking legal action once notes from the school appear on the site — which, as of Wednesday, they had not.

"I am troubled by it because I, like thousands of faculty members, spent a great deal of time developing my courses within a specific intellectual context, a context that I control," he said.

Mr. Wolf said the seeds of his idea were first sown while he was studying economics at Austin, when he had occasionally taken advantage of a similar service there: For $30 per class, a private note-taking firm would arrange for him to get paper copies of any notes that he might have missed.

After graduating in 1995 and moving to Houston, he learned that the university there had no such service, and so he founded his own. Initially taking 10 hours of notes a day himself, he quickly expanded his operation to include about 3,000 subscribers — they, too, paid $30 for each of 120 classes — and about 40 note-takers.

Mr. Wolf said professors at the University of Houston were initially wary of helping him and his note-takers gain access to classes, if they were not enrolled.

But he said he won them over when they realized that attendance did not drop as a result.

When Mr. Wolf discovered that such services were rare on other campuses, he said he decided to take his operation national.

With an investment from New Strategy, a Houston company that has nurtured other web companies, and rolling banner of advertisements that includes the Capital One Visa Platinium Card, Mr. Wolf began recruiting note-takers at fraternities at 62 of the largest colleges and universities throughout the United States.

Because he has assembled his operation so quickly, using students already in courses, Mr. Wolf said he would not be asking professors for permission to broadcast their notes.

Thus, many are likely to be as surprised as Professor Syer at Sacramento who learned from a reporter Wednesday that his introduction to the world's 10 largest countries had been reproduced by an anonymous note-taker for all to see.

"I'm not unalterably opposed to this dissemination," he said.

"I'd just like to know how wide my audience is. I'm going to get up there and take on the policies of the US government, the policies of the Indonesian government, the policies of the Chinese government."

"If I think this is something that is going to be quoted globally," he said, "it may change what I say."

Questions 1-8

Do the following statements agree with the view of the writer in the passage? Please write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement contradicts the view of the writer;*
NOT GIVEN	*if it is impossible to say what the writer thinks about this.*

1. Students who wish to visit the website offering notes of major college courses must pay a fee.
2. Mr. Wolf used to oversleep chronically.
3. Many people believe that the kind of service offered by Mr. Wolf is detrimental to the education of arts.
4. Professor Mark Edmundson believes that such websites pose a major threat to the present educational system.
5. Students who take notes for Mr. Wolf were denied access to classes.
6. By broadcasting notes without permission from the professors, Mr. Wolf might get involved in lawsuits.
7. Professor Syer was indignant when he learned that notes of his lecture were posted on the Internet.
8. Professor Syer will adjust to the demand on the Internet and change the content of his lecture.

Exercise 6

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Ill Winds

From sacred cows to white elephants is a short jump. Wind power, once seen as the eco-friendly cure-all for Britain's energy problems, is attracting unprecedented criticism. The latest campaign, which unites veteran greens and the opposition Tories, opposes a proposed installation of 27 wind turbines next to Rommey Marsh in Kent, a noted bird sanctuary and beauty spot. Hundreds more are planned elsewhere — many in beautiful bits of the countryside where some of Britain's richest people happen to love. A bunch of media-savvy local organizations is now lobbying hard to stop them.

The government remains unmoved. It calls wind power "the most proven green source of electricity generation" and cites Denmark as a role model. Renewables (mostly wind) account for 20% of electrical generation capacity there. Renewable energy is needed both to cut CO_2 emissions, promised under the Kyoto treaty, and to reach the government's own target of generating 10% of British electricity from renewable sources by 2010. The cost of this to the taxpayer is likely to be £1 billion a year by 2020.

But as well as Tories, toffs and country-lovers, many others think that wind power is seriously flawed. The first big problem is that it is too expensive. Although the British Wind Energy Association puts the cost of electricity from onshore wind farms at 2.5p per kilowatt-hour, only slightly more costly than other power sources, the Royal Academy of Engineering claims that on a more realistic view of construction costs it is much dearer: 3.7p when generated onshore and 5.5p offshore.

The government has tried to bridge this gap with tradable certificates. The wind-gatherers gain one of these for each megawatt-hour they generate. Power distribution companies then buy them as an alternative to paying the fines levied for failing to buy a set proportion of renewable energy annually. But a recent House of Lords report noted a big snag: the nearer the industry gets to meet the government's targets, the less the value of the certificates; once the target is passed, their worth falls abruptly to zero.

So the certificates, which will cost consumers a cool £500m this year and will be even more expensive next year, cap the supply of renewable energy instead of encouraging it. In effect, firms will buy only the minimum amount of renewable energy necessary to comply with the law.

Then there are the engineering problems. Too light a breeze means no power; too strong a gale and the turbines shut down to prevent damage. Even the wind-lovers expect that the farms will manage only 30% of their full capacity on average. Worse, that output can fluctuate rapidly — by up to 20% of the total national wind capacity in the space of a single hour, according to Hugh Sharman, an energy consultant, who has studied Denmark's wind industry. Furthermore, in a typical year like 2002, he says, there were 54 days when the air was so still that virtually no wind power was generated at all.

But whereas Denmark can import power from Norway and Germany to keep the lights on during calm periods, Britain's power grids is not set up for imports. So conventional coal-, oil- or gas-fired power stations would have to be kept running, ready to take up the load at short notice. That sharply raises the real cost of wind energy and means extra CO_2 emissions.

Ministers may be right when they argue that wind power is the only renewable energy source that has even a theoretical chance of meeting the government's targets. Given the costs and technical uncertainties, perhaps it would be better to abandon those targets altogether.

Questions 1-9

Do the following statements agree with the view of the writer in the reading passage? In boxes 1-9 on your answer sheet write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement does not agree with the view of the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

1. Wind power used to be regarded as a panacea for Britain's energy problems.
2. Twenty-seven wind turbines were set up near Rommey Marsh in Kent.
3. The British government tries to follow the example of Denmark in the exploitation of wind power.
4. Now renewable sources generate 10% of British electricity.
5. Wind power is more expensive than other renewable energy.
6. Power distribution companies are fined if they do not buy a certain amount of renewable energy each year.
7. Tradable certificates help develop renewable energy.
8. Norway and Germany generate their energy from conventional resources like coal, oil or gas.
9. According to the author, the government should give up its unrealistic targets.

Exercise 7

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Stuffed

The British seem to be going off chocolate, but some bits of the market are doing deliciously well

It's usually nice to top an international league, but perhaps not this one. In the matter of chocolate consumption, Britain is the most self-indulgent country among the world's big economies.

That may not last. Perhaps brow-beaten by the obesity scaremongers, perhaps disgusted by their inability to see their toes, the British seem to be going off chocolate. The market has been static for five years and this is troubling Nestlé, Cadbury and Masterfoods, the three firms that dominate the British industry. "It's a saturated market," says Jeremy Cunnington, an analyst for Euromonitor, a market research agency. "Penetration has gone as far as it can." Mintel, another market research firm, agrees, predicting a slight drop in sales volume by 2006. With profits constrained by tight pricing on supermarket shelves, firms will focus more and more on extending a few superbrands with lasting appeal, subsuming existing products into them and trying to improve sales value rather than volume.

If they do, it will continue a trend towards emphasising established brand names instead of new ones. Cadbury has stopped selling its Wispa and Caramel products under their old names, bundling them under the Dairy Milk brand instead. Nestlé has been tinkering with its own big name, Kit Kat. A new version of the snack, Chunky, was launched in 1999, followed by bite-sized Kubes in 2003. There was even talk recently of a lemon cheesecake flavour — apparently popular with the Japanese and the Germans.

Not all the news is gloomy, though. There are lively niche markets, where consumers' sharpening social consciences and growing fondness for luxury have been lifting sales.

Clever companies satisfy both at once. Green & Black's, a small firm that sells expensive, organic GM-free chocolate, has seen its sales rise five-fold since 1999 to £23.4m in 2003. The firm has recently been moving away from its green roots to focus on its premium credentials, but "organic" and "premium" are linked in many people's minds.

The "fair trade" segment is another impressive performer. Such organizations guarantee producers in poor countries a minimum price, shielding them from the ups and downs of the world cocoa market. Figures from the Fair Trade Foundation show that Britain ate just over 1,000 tonnes of their chocolate in 2003, up from 82 tonnes in 1998 — a 12-fold increase in five years, albeit from a very low base. The big players are beginning to cotton on, with the Co-op, a supermarket chain, announcing in 2002 that it would source all its own-brand chocolate from "fair trade" suppliers. Most British supermarkets now offer some sort of "fair trade" chocolate.

So will posh, socially responsible chocolate conquer the market? Unlikely, says Mr. Cunnington. Luxury firms do not compete directly against the big companies — indeed their products have little in common. Most British chocolate contains vegetable solids, and tastes quite different from the "real" chocolate that the luxury firms offer. As for "fair trade", higher prices for producers mean higher prices for consumers, limiting its appeal to a cost-conscious public. Although the two sectors are expected to continue growing strongly, they are unlikely to escape from their niches. The cocoa-leaf readers see a future of consolidation, limited innovation and a gentle decline in sales volume. Lemon cheesecake Kit Kats all round, then.

Questions 1-6

Do the following statements agree with the view of the writer in the reading passage? In boxes 1-6 on your answer sheet write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement does not agree with the view of the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

1. Britain no longer leads the world in its consumption of chocolate.
2. Nestlé, Cadbury and Masterfoods are the biggest producers of chocolate in the world.
3. Firms will try to increase their profits by boosting the amount of sales.
4. Firms will continue focusing on well-known brands instead of new ones.
5. Companies find it hard to sell expensive chocolate.
6. With more innovation, the chocolate market will enjoy an increase in sales volume in the future.

Questions 7-10

Complete the sentences below. Choose NO MORE THAN THREE WORDS from the passage for each answer.

7. ____________ seems to be one reason why the British are going off chocolate.
8. The British chocolate market has remained ____________ for five years.
9. Clever companies try to improve sales by catering to ____________ markets.
10. ____________ chocolate suppliers have entered big supermarkets because of their practice with poor countries.

Exercise 8

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 20 minutes.

Brain Drain

Of great concern to many Chinese educators and economists is
the rapid outflow of "brains" — the brain drain

Education has always been perceived as the engine room of development and the last 5 decades has seen a concentrated effort by the Government to improve the average level of education. One of the major drawbacks has been the abysmal illiteracy rate which plagued "New China" from the beginning. However, recently, major advances have been made. For example, the proportion of illiterate and semi-illiterate people to the total population aged 15 years and older has dropped, from 15.9% in 1990 to 12.1% in 1997. However, the average Chinese individual will study for only 5.4 years. Despite this, in urban areas residents aged 15 years and older with middle and high school education make up 29.7% and 20.7% respectively, while those with a tertiary education account for 7.5% of the population. Competition to enter university is fierce and begins during the final years of elementary school. Naturally, only the very smartest enter the university system which currently does not contain enough places for all those who graduate from high school. After entry, in order to continue studying, the student will often need to compete for a place at a foreign institution or to be awarded a foreign corporate scholarship.

The average Chinese university student has a strong desire to further their studies overseas, especially in the US. This desire is based on the premise that not only will they receive a higher salary (in China) but that they will have opportunities to work and live overseas, earning even more money. This desire is being pandered to, not only by the innumerable scholarships offered by US universities, but also by the recent development of Educational Bank Loans offered by Chinese banks. Education is not free in China, and many parents see better value for their money in a foreign education. American institutions hold a prestigious position within the world of tertiary education in China, not necessarily because of their academic excellence, but because they offer scholarships and assistant teaching positions (which include school tuition and/or minimal living expenses). Many students would be just as happy to study in Australia, Canada or Europe, but fewer scholarships exist. It is the corporate structure of American tertiary education which offers Chinese students the most opportunities.

Not only are the universities directly recruiting, they are supported by many large multinational and US-based companies. Some Chinese educators are concerned by the proliferation of foreign-funded scholarships. Their concern is that the "cream" of Chinese talent will be co-opted by the foreign companies which sponsor the scholarships. It is not necessarily the overseas university scholarships which worry the professors, but those that have been established in Chinese universities by companies like Microsoft, Mercedes-Benz, IBM, and Motorola. One Chinese professor is uneasy about this development because "... domestic enterprises cannot offer close to the same number or size of scholarships", and he is worried that foreign companies will attract China's top students, leaving none for domestic enterprises. Not surprisingly, many Chinese universities are unwilling to disclose details about the amounts and types of foreign scholarships being offered. Apparently Qinghua University offers the largest number of scholarships, over 100, ranging from RMB1,000 (USD120) to RMB5,000 (USD600). Of these, 80% to 90% are offered by foreign companies. Likewise, the majority of scholarships at Beijing University are foreign corporate scholarships. The majority of these scholarships are in disciplines related to the sponsor's product or market.

Humanities, Languages and Fine Arts are already underfunded and many lack any scholarships at all. A professor at Beijing Normal University also cautioned that foreign corporate scholarships could have adverse effects for China's economic development. He gave the example of an automotive technology centre at an important Chinese university that accepted a grant from a Japanese company which retained the rights to any research published by recipients of the grant. From the student's perspective, the corporate scholarship offers more than just education. Said one student, "... as time goes by I am paying more attention to this company ... generous salary and bright future that it offers are very attractive to me. The university really isn't able to control whether or not its students work for foreign companies after they graduate".

The other side of this coin is China's recent attempts to recruit scientists from overseas. In order to tempt up to 300 scientists living abroad, the Government is spending RMB600m (USD72.55m) over the next 3 years. Recruits will be awarded a research grant worth around RMB2m (USD241,838) to work with the Chinese Academy of Sciences on research under the National Innovation Project. Earlier this year, China announced it would invest RMB5b (USD604.59m) on the National Innovation Project by the end of 2000. What is most interesting about this situation, both the National Innovation Project and the recruitment drive, is the unspoken belief among educators that this is particularly aimed at the Chinese nationals already living and working or studying overseas. Overseas Chinese are considered ethnic Chinese and granted permanent residence within China. Many of these overseas Chinese are individuals who were originally Chinese nationals, born in China but now owners of foreign passports. Currently, they are being actively courted by the Government, not only for their skills, but also for their revenue. Over the past 20 years, China has attracted nearly USD260b in utilized foreign investment, with over 70% of this investment coming from overseas Chinese.

There exists a general belief that most students who leave to study overseas tend not to return. However, few foreign embassies in China accumulate statistics on this area, and some state that there are no reliable statistics available. Statistics from various embassies in China do show that there continues to be a large number of Chinese nationals applying for and receiving visas to study overseas (see figures below). If even half of these individuals remain overseas, there will be a corresponding lack of talent and skill in China. The "brain drain" is a very real possibility.

Statistics on Student Visa Issuances

US Embassy
Statistics for fiscal year 1999 (1 October 1998 to 30 September 1999)
Countrywide 13,636 F1 (Student Visas)
5,589 J1 (Exchange Visitor Visas)

Comparative statistics for fiscal years 1998 & 1999
Beijing Consular District 1998 — 7,248 F1
3,520 J1
Beijing Consular District 1999 — 8,309 F1
3,408 J1

Canadian Embassy
During the first 8 months of 1999
4,421 applications were processed to completion

Comparative statistics for the first 8 months of
1998 — 2,119 applications were received
1999 — 5,886 applications were received
an increase of over 177%
1999 total is expected to be over 8,000, as opposed to 3,361 in 1998

During the first 9 months of this year, 66.9% of applications processed were accepted. The acceptance rate for 1998 was 55.2%.

Refusal rates for 1999 (to early June):

Canada:	33%
Australia:	37%
USA:	40%
United Kingdom:	22%
New Zealand:	67%

(It should be kept in mind when considering the above rates that different legislation and criteria govern each country's treatment of student applications.)

Questions 1-13

Do the following statements agree with the writer of the passage? Please write

YES	*if the statement agrees with the writer;*
NO	*if the statement does not agree with the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example:	Answer:
The problem of brain drain is becoming serious in China.	*YES*

1. The average schooling of rural population is 5.4 years.
2. In urban areas, about one in five people complete high school.
3. Educational Bank Loans are not offered to middle or high school students.
4. American universities are preferred because they usually have a better academic record.
5. Some foreign business giants like IBM offer scholarships to support Chinese students studying in the USA.

6. It is felt that Chinese enterprises are not able to compete with foreign ones for attracting top students.
7. Students studying Fine Arts are less likely to receive scholarships than those studying technology.
8. The National Innovation Project is run by the Chinese Academy of Sciences.
9. Most of the foreign investment comes from ethnic Chinese who have foreign passports.
10. Concerns for brain drain is not necessary since people who stay abroad are only a small proportion of the educated Chinese.
11. People intending to study in the UK have a better chance of being granted a visa than people intending to study in New Zealand.
12. There were 1,242 visa applications handed to the Canadian Embassy during the last four months of 1998.
13. Of the foreign countries listed, the US is the most difficult one to apply for a visa.

Unit Six

Scanning for Answers

Tìm nhanh Đáp án

Tìm kiếm những thông tin mang tính sự thật cụ thể là một khả năng đọc cơ bản, cũng là một điểm kiểm tra quan trọng trong môn thi đọc IELTS. Môn thi đọc IELTS thông qua các dạng đề thi khác nhau để kiểm tra khả năng cơ bản này của thí sinh, trong đó bao gồm đề hoàn thành câu, đề trả lời ngắn, đề điền ô trống, biểu đồ v.v..

So với việc nắm vững ý chính và phán đoán quan điểm của tác giả, việc tìm kiếm những thông tin mang tính sự thật dễ hơn nhiều, trong tình huống thời gian cấp bách nên hoàn thành loại đề này trước tiên. Cách trình bày của loại đề này thường là lời diễn giải (paraphrasing) thông tin ở nơi nào đó trong bài đọc. Trước tiên, thí sinh phải đoán xem đáp án là nhân vật, thời gian, nơi chốn hay là chữ số, sau đó dựa vào các từ then chốt trong câu hỏi để tìm kiếm các từ hoặc cụm từ có nghĩa liên quan hoặc gần giống trong bài đọc.

Khi tìm kiếm những thông tin mang tính sự thật nên sử dụng phương pháp đọc lướt (scanning). Đọc lướt là một phương pháp đọc nhanh, tìm kiếm một sự thật cụ thể hoặc một thông tin xác định nào đó (ví dụ như nhân vật, sự kiện, thời gian, địa điểm, chữ số v.v.) từ trong một lượng lớn tư liệu, không đọc những phần không có liên quan khác. Khi áp dụng phương pháp này, người đọc sẽ có thể đọc lướt rất nhiều nội dung trong thời gian ngắn nhất và tìm được những thông tin cần thiết. Đọc lướt đi kèm với sự lựa chọn rõ ràng một cách có mục đích, có tính tập trung vào các đáp án cho câu hỏi. Vì vậy, có thể đọc lướt nhanh nội dung bài đọc, không cần phải đọc từng chữ, từng câu. Một khi phát hiện nội dung có liên quan, phải dừng lại một chút để đánh dấu.

Các bước giải đề:

1. Đọc kỹ phần hướng dẫn và thí dụ mẫu.

2. Đọc đề bài và đánh dấu các từ then chốt có thể là manh mối. Dựa vào kiến thức nền để phán đoán đáp án là tên, nơi chốn hay là chữ số, đoán trước đáp án.

3. Đọc nhanh bài đọc, dựa vào các manh mối trong đề bài, dùng phương pháp đọc lướt (scanning) để tìm kiếm đáp án và đánh dấu.

Saving Species in the Forest

Exactly what a public forest is and how the public should be able to use it has been debated since the National Forests were first formed in 1905. Since then, the US Forest Service has been allowing timber, mining, ranching, and recreational interests to use the forests as a resource. In fact, the Forest Service, which manages 34 million acres of wilderness across the country, is part of the Department of Agriculture. Since the government perpetuated the concept of nature as a user-friendly commodity, you might say that it missed the forest for the trees.

For the last 27 years, the rest of the nation — both public and private — has been working to comply with the landmark Endangered Species Act, but the US Forest Service has paid little attention to the wildlife under its care: sometimes due to a lack of funds, sometimes a lack of information, sometimes a lack of will. For the forests in Southern California, however, this is changing. A little known regional environmental group, the Center for Biological Diversity, brought a lawsuit two years ago that has forced the Forest Service to face the Endangered Species Act and comply with it. Assuming the agency is able, all the life in the forest, from Smith's blue butterfly to the cattle rancher to the intrepid backpacker, will be affected.

In the Los Padres Forest alone, which spans almost two million acres, as many as 11.6 million people have been allowed to troop in each year during the summer months, unknowingly disrupting a fragile ecosystem essential to the health of the forest they have come to enjoy. Even the rugged packers in the backcountry, mostly nature-lovers at heart, have disturbed the breeding of the red-legged frog and arroyo as they camped, with permission, along shallows.

Invasive species aside from humans pose problems as well. Bullfrogs originally from the Eastern US are munching red-legged frogs and arroyo toads, as are the warm water non-native fish species like small-mouthed bass and blue gill. Fragile native plants are being crowded out by pampas grass and other non-natives in the majority of the meadows. One of the most dangerous invaders of Southern California is the cowbird, also an East Coast native, which has been wreaking havoc on native avian species across the country. Cowbirds have the offensive but biologically useful trait of laying eggs in others' nests, leaving the host parents to rear its big, hungry young. Often the baby cowbird hatches first and develops faster at the expense of its foster parents' offspring.

Temporary emergency measures adopted in January 1999 to address these problems closed four campgrounds in the Ojai Ranger District from sunset to sunrise to protect the arroyo toad. In the Monterey District, fencing and grazing use were limited for the benefit of steelhead.

The final settlement on March 1 of the Center for Biological Diversity suit stipulated another set of protections, largely benefiting the California condor. Poisonous ethylocol-based antifreeze was banned, requirements for anti-perching devices on communication sites went into effect, and bird-safe power lines must be installed.

The group responsible for all these changes, the Center for Biological Diversity, is a Tuscon-based non-profit staffed by conservation biologists and attorneys. The centre is currently engaged in more than 40 lawsuits, mostly against the government, all attempting to prod compliance with the Clean Water Act, the National Environmental Protection Act, the Endangered Species Act. According to the centre's conservation biologist, Peter Galvin, the precedent set by the Southern California settlement could be applied to public forests across the country.

Even with litigious biologists on the trail, the goals of the settlement may not be fulfilled. As the plight of the southwestern willow flycatcher shows, the science of species conservation has its limits. And that's for the species that have already been identified and listed as threatened or endangered. Then there are those that have not yet been studied.

The settlement comes at a crucial juncture for the Forest Service. In response to diminished federal funding, Congress has attempted to pay for the forests by introducing the controversial Adventure Pass, which charges fees for forest access. Congress is expected to vote on a permanent program in the summer of 2002.

Clearly barriers remain, both natural and financial, to a perfect plan for saving endangered species. The Center for Biological Diversity may have provided a kick-start, however. While the lawsuit was based on the deficiencies in the Forest Service, the settlement allows a chance at a better plan, the review of out-of-date information, and an ecosystem-wide analysis. Armed with the best science Southern California has to offer and outfitted with Fish and Wildlife cooperation, the Forest Service has another chance to help save endangered and threatened species.

Using NO MORE THAN THREE WORDS from the text, answer the following questions.

1. What activities have been allowed in public forests since 1905?
2. What made the Forest Service comply with the Endangered Species Act?
3. What is the area of the Los Padres Forest?
4. What is threatened of a forest by the influx of people?
5. Apart from humans what else are regarded as invaders of forests?

6. When were four campgrounds closed in order to protect the native species in the forest?

7. Which organization played a major role in bringing the government to comply with the environmental protection laws?

Câu 1: Đáp án là ba từ trong các từ timber, mining, ranching, recreational. Tìm đáp án trong phần mở đầu bài đọc, manh mối là 1905.

Câu 2: Đáp án là a lawsuit. Danh từ riêng bắt đầu bằng chữ cái in hoa trong câu hỏi là manh mối để chúng ta tìm đáp án.

Câu 3: Đáp án cần tìm phải là chữ số, Los Padres Forest là manh mối để tìm. Đáp án là two million acres.

Câu 4: Dựa vào thường thức, thứ mà người ta phá hoại là môi trường sinh thái hoặc các giống loài trong rừng. Đáp án là the ecosystem.

Câu 5: Trong bài đọc, tương ứng với Apart from humans là aside from humans. Đáp án là invasive species.

Câu 6: Đáp án phải là năm, do đó tìm chữ số, đáp án là January 1999.

Câu 7: Ở đây cần tìm tên của một cơ quan, nên khi đọc phải chú ý đến các danh từ riêng bắt đầu bằng chữ cái in hoa, đáp án là Center for Biological Diversity.

Exercise 1

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Will Antarctic Ozone Bite the Dust?

This year's ozone hole above Antarctica may be deeper than ever as a result of the eruption of Mount Pinatubo. This is the conclusion of researchers who have combined observations of the effect of debris from the eruption on the stratosphere with the latest measurements of stratospheric ozone over the equator and the Antarctic.

A team led by W. B. Grant of the NASA Langley Research Center in Hampton, Virginia, monitored the influence of Mount Pinatubo, in the Philippines, before and after its eruption last June, using balloon-borne instruments launched from Brazzaville in the Congo (4 South, 15 East) and Ascension Island (8 South, 14 West).

The scientists found that most of the volcanic material injected into the stratosphere settles out at a height of between 18 and 28 kilometres, with the greatest concentrations between 24 and 25 kilometres. At precisely these altitudes, the amount of ozone in the stratosphere declined between three and six months after the eruption. The greatest loss — of 20 per cent — was at an altitude of 24 kilometres (*Geophysical Research Letters*, Vol. 19, p.1109).

The loss of ozone at a height of between 16 and 28 kilometres was between 13 and 20 Dobson units — about 5 per cent. There was a slight increase in the ozone concentration above 28 kilometres, but the researchers could not measure ozone beyond 31 kilometres because their balloons burst.

Grant and his team suggest that reactions in the stratosphere involving the Pinatubo material release chlorine in the active form which destroys ozone. Stratospheric chlorine originates chiefly from the manufactured compounds known as CFCs, but is usually locked up in stable form as chlorine nitrate. In the presence of sulphuric acid droplets from Mount Pinatubo, ozone-destroying chlorine monoxide is released.

Chlorine monoxide, which is produced by a similar series of reactions involving icy particles in the stratosphere, is blamed for the springtime depletion of ozone above Antarctica. In 1991, this depletion was as severe as in any year since the discovery of the ozone hole in the early 1980s, according to B. L. Johnson, T. Deshler and R. A. Thompson of the University of Wyoming, Laramie. Balloon flights from McMurdo Station, which lies at 78 South, revealed severe ozone depletion in October 1991 at altitudes between 12 and 20 kilometres, with a 93 per cent loss of ozone between 17 and 18 kilometres (*Geophysical Research Letters*, Vol. 19, p. 1105).

The minimum amount of ozone above McMurdo, reached on 10 October 1991, was 146 Dobson units — almost exactly the same as the minimum reached in 1987 and 1990. The figure for the column between 12 and 20 kilometres altitude was a record low of 18 Dobson units, representing a loss of 83 per cent of the ozone in that layer.

"The 1991 volcanic eruptions will substantially increase the aerosol loading within the polar vortex for 1992, both below and above 20 kilometres," the team predicts. "These extra particles may enhance the heterogeneous reactions, leading to ozone destruction, and this ozone depletion above Antarctica may worsen in 1992 by spreading to altitudes beyond the 12 to 20 kilometres layer."

Questions 1-4

The table below gives information about ozone depletion. Give the missing information.

Year	1987	1991
Altitude	1.	2.
Percentage of loss	3.	4.

Questions 5-8

By referring to the passage, decide whether the following statements are true or false. Write T for true and F for false.

_______ 5. Ozone is destroyed by chlorine in the active form.

_______ 6. Chlorine nitrate was responsible for the springtime depletion of ozone above Antarctica.

_______ 7. The aerosol loading within the polar vortex will increase substantially because of the 1991 volcanic eruptions.

_______ 8. Scientists predict that ozone depletion over Antarctica may improve in 1992.

Exercise 2

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

A Light Bulb that Lasts

Consider a light bulb — the ordinary, incandescent kind, invented by Thomas Edison in 1879. It is a big improvement on the candle, but it works essentially the same way, by heating something until it glows. This obviously is not the most efficient way to produce light; some 90 per cent of the energy consumed by incandescent bulbs is wasted as heat, and the filament burns out after six to twelve months of normal use. A fluorescent bulb, which produced light by the excitation of phosphor atoms coating the inside of a glass cylinder, eliminates these drawbacks. But the tubular model used in most offices never really caught on in homes. "Compact" fluorescents that screw into ordinary sockets have recently become available, but even they are too big to fit some fixtures and cannot be used with dimmer switches. Last week a small California company announced that it had solved these problems. By next year, it plans to market the "E-(for electronic) Lamp," a bulb that will be completely interchangeable with incandescents, use a quarter as much energy, and last a decade or more.

The secret is a tiny radio-frequency generator in each bulb, transmitting energy to a surrounding cloud of mercury gas and in turn to the fluorescent coating. The principle is not new, the breakthrough lies in shielding the bulb to avoid interference with other electronic devices, especially televisions and radios. Since any ordinary substance that blocks radio waves would also be opaque to light, the solution must be ingenious. Unfortunately, Intersource Technologies, which developed the bulb with backing from Ohio-based American Electric Power Co., the nation's second largest utility, isn't saying how it's done.

This ingenuity comes at a price. Like compact fluorescents, E-Lamps should cost around $15 per bulb at first, less as they go into mass marketing. But counting the cost of the bulb and the electricity to run it, a 25-watt E-Lamp should save around 20 cents a week compared with a 100-watt incandescent, and give the same amount of light. There are some 1.5 billion light sockets in the United States; each incandescent that is replaced by an E-Lamp would save an estimated ton of carbon dioxide from electrical generating stations over the life of the bulb, a small step toward reducing emissions of greenhouse gases.

Durable Good: As for the high price, Intersource chairman Pierre Villere expects consumers will treat the bulb as a durable good. Eventually, he predicts, it will take its place "next to the hair dryer, the microwave and the food processor" as an indispensable convenience. Since the electronic components last indefinitely, the bulb should fail only when the phosphor deteriorates (or someone knocks the lamp off the table). And instead of burning out with a "pop", the new bulbs will gradually become less bright. Someday lamps and fixtures may have the electronic components built into their base, and consumers will just slip on a cheap replaceable glass jacket containing the mercury and phosphor. Then we will truly have come a long way from the candle. As Villere puts it: "It's almost inconceivable that an invention that is so much a part of our lives as the light bulb has been around since Edison with so little innovation."

Questions 1-2

1. How does the incandescent light bulb work?

____

2. How does a fluorescent bulb work?

____

Questions 3-7

Identify the following features to incandescent bulb or E-Lamp. Write I for incandescent bulb and E for E-Lamp.

______ 3. Most energy is wasted.

______ 4. Short life.

______ 5. Fails only when the phosphor deteriorates.

______ 6. Eventually reduces house emissions of greenhouse gases.

______ 7. Works essentially the same way as candles.

Question 8

The principle on which the E-Lamp works lies in

A. excitation of phosphor atoms.
B. transmitting energy to the fluorescent coating.
C. heating something until it glows.
D. generating radio frequency.

Exercise 3

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Elemental Clues to a Galaxy's Past

Clues to how a galaxy has evolved may lie in its supply of oxygen and iron, according to two astronomers. For many years, scientists have known that different galaxies evolve in different ways. In our Milky Way, for example, stars have formed at a fairly constant rate since its birth. But in our two nearest neighbours — the Large and Small Magellanic Clouds — stars seem to arise in bursts of star formation, with long periods of quiescence in between (*New Scientist, Science*, 18 August). Researchers know this because they have painstakingly measured the ages of different stars in the Magellanic Clouds, and found that stars of a certain age are more common.

Now there may be an easier way. Gerard Gilmore of the Institute of Astronomy in Cambridge, England, and Rosemary Wyse of Johns Hopkins University in Baltimore, Maryland, claim that the ratio of oxygen to iron in a galaxy's stars can reveal whether a galaxy has created stars at a steady rate (as is the case in the Milky Way) or in bursts (as is the case in the Magellanic Clouds). Their work will be reported early next year in the journal *Astrophysical Journal Letters.*

Galaxies are thought to have formed from clouds of hydrogen and helium gas that lacked heavy elements, such as oxygen and iron. Later, some of the stars born from this gas created heavier elements deep in their cores. If these stars explode, they eject the heavy elements into a galaxy. When new stars form from this ejected materials, they acquire more of these heavy elements. In this way, a galaxy's supply of heavy elements increases in time: old stars have fewer heavy elements, whereas younger stars — such as the Sun — have more.

But it turns out that oxygen and iron arise from two different types of exploding stars, or supernovae. Oxygen gets ejected into a galaxy from massive stars — those born with more than eight times the Sun's mass. Such a high-mass star burns its fuel quickly and dies quickly, exploding as a so-called Type II supernova and forming a compact neutron star or a black hole.

Before it explodes, the high-mass star creates both oxygen and iron. But oxygen is lighter than iron and floats up outside the core of the star, whereas the iron remains at the star's centre. When the star explodes, the oxygen is set free, while the iron gets sucked into the newly formed neutron star or black hole. So high-mass stars contribute a lot of oxygen to a galaxy, but little iron.

In contrast, less massive stars can eject lots of iron into a galaxy. Stars born with masses less than eight times that of the Sun's eventually form white dwarfs, stars that are dim, small and hot. If material from another star falls onto the white dwarf, the white dwarf can eventually explode, producing a so-called Type I supernova. Astronomers know that this type of explosion creates large amounts of the element iron.

High-mass stars, which eject oxygen, are short-lived, whereas lower-mass stars, which can produce iron, live longer. Therefore, the two types of stars explode at different rates during the life of a galaxy, and oxygen and iron are produced at different rates at different times.

Shortly after its formation, the Milky Way gave birth to stars with a wide variety of masses. The short-lived, high-mass stars quickly exploded and showered the Galaxy with oxygen. Only much later did white dwarfs form and explode, producing iron. The Galaxy's oldest stars — those born as the oxygen-producing stars exploded but before the iron-producing stars did so — should, therefore, have high ratios of oxygen-to-iron. This is exactly what astronomers find.

Gilmore and Wyse have modelled a galaxy that produces stars in bursts, unlike the Milky Way. They predict that such a "bursting" galaxy can have an oxygen-to-iron ratio that is lower than the Sun's.

To see why, imagine a galaxy that creates a lot of stars of different masses, then stops making stars. In the early years, the high-mass stars explode and produce oxygen. After the high-mass stars die out, however, only the lower-mass stars are left. These lower-mass stars eventually form white dwarfs, some of which explode and produce iron.

The amount of iron in this galaxy increases and the oxygen-to-iron ratio falls, because no more oxygen-producing high-mass stars are born any more. So, although the galaxy's oxygen-to-iron ratio starts high, it soon falls until it is less than the Sun's. Even if a new burst of star formation happens, the resulting high-mass stars will not produce enough oxygen to raise the oxygen-to-iron ratio above what it would have been if the galaxy had formed stars continuously. In contrast, a galaxy that keeps forming stars — such as the Milky Way — keeps producing high-mass, oxygen-producing stars all along and keeps its oxygen-to-iron ratio higher than a galaxy that forms stars in a series of bursts.

Gilmore and Wyse apply their results to the Large Magellanic Cloud, where young stars have ratios of oxygen-to-iron that are only half that of the Sun's. This low oxygen-to-iron ratio arises, Gilmore and Wyse say, because the Large Magellanic Cloud produces stars spasmodically rather than continuously.

There have been other explanations for the Large Magellanic Cloud's low oxygen-to-iron ratio. In particular, the Large Magellanic Cloud may simply produce fewer high-mass stars (which create oxygen) relative to lower-mass stars (some of which eventually create iron). But other evidence reveals starbursts in the cloud.

Questions 1-11

Decide whether, according to the passage, the following statements are true or false. Select A if a statement is true, B if it is false, and C if the information is not given. The first has been done as an example.

Example:

Stars in the Milky Way have formed at a fairly constant rate since its birth.

Answer: *A* ✓ *B* *C*

1. Galaxies are thought to have formed from clouds of hydrogen and helium gas with heavy elements, such as oxygen and iron. A B C
2. The stars in the Magellanic Clouds seem to have formed in bursts. A B C
3. Old stars have more heavy elements whereas young stars have fewer. A B C
4. White dwarfs are short-lived. A B C
5. High-mass stars contribute a lot of iron to the galaxy. A B C
6. A compact neutron star is large and bright. A B C
7. Lower-mass stars will eventually form white dwarfs and high-mass stars will eventually form compact neutron stars or black holes. A B C
8. The Milky Way keeps forming stars and having a higher oxygen-to-iron ratio. A B C
9. There are more lower-mass stars in the Magellanic Cloud than in the Milky Way. A B C
10. Young stars in the Large Magellanic Cloud have ratios of oxygen-to-iron that are twice that of the Sun's. A B C
11. The Large Magellanic Cloud may produce fewer lower-mass stars relative to high-mass stars. A B C

Exercise 4

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Vital Role in World Airline Industry

Telecommunications play a vital part in the world airline industry where there is a need for speedy contact over long distances, and where the sheer size of the number of people and freight being carried today would overwhelm systems lacking the most modern technology.

Most of the world's airlines have highly advanced systems, although some of them have tended to be outpaced by the explosive growth enjoyed by the industry over the past decade, particularly in areas such as the Middle East, parts of Africa, and the Far East. Estimates made at the beginning of the 1970s of the number of messages which would be passed by 1980 proved in most cases to be far too low, with the result that there was a scramble during the late 1970s for new equipment.

But while the equipment is available, the highly skilled manpower needed to operate it and to service it remains scarce for the airlines which have to compete with the many other users of advanced telecommunications. Most of the bigger airlines now have their own training schools, while the smaller ones send their trainees to schools such as that operated by International Aeradio at Bath. There is still a residual glamour about working for an airline for some recruits, and the prospect of cheap staff travel also attracts people.

Airline communications break down into four main sections: radio, teletype, telephone and data processing. Radio is used for passing messages between ground and the airliners, although in remote parts of the world it may also be used for messages between various bases. Each operator will have a selective call band over which it can pass company messages to its crews in flight wherever they are.

Routine low-speed internal company messages generally come over the company teletype system, but in most airlines they have reached such large numbers that they are distributed by computer.

SITA, the international airlines communications consortium, and a similar organization in the United States, play a major part in this vast message-passing operation. Saudia, the national airline of Saudi Arabia, a medium-sized operator, passes, for instance, 30,000 routine low-speed messages every 24 hours, rising to 40,000 in 24 hours at the peak travel season.

It is in the area of data communications that telecommunications have had, and will continue to have, the greatest impact on the airline industry, however. To take the case of Saudia again, the airline is to install its own in-house computer in 1982, but in the meantime "piggybacks" on the British Airways computer at West London air terminal 3,000 miles away for its reservations, and on the Alitalia computer in Rome for its engineering inventory.

The link with the BA computer BABS in London is achieved by way of land lines in both Saudi Arabia and Britain and in between by satellite, one over the Indian Ocean, the other over the Atlantic. Reservations clerks in Jiddah can interrogate BABS by way of their keyboards and have the answer back on their video screens in the amazingly short time of two seconds.

When Saudia installs its own computer, it will cope not only with reservations and the engineering inventory at present carried in Rome, but such extra tasks as payroll, finance, flight-crew scheduling, and flight operations rosters.

Modern telecommunications help Saudia to answer up to 7,000 calls a day at its Jiddah office alone, 90 per cent of them being replied to within 20 seconds against an airline industry average of 80 per cent.

Computer and telecommunications sharing is common in the airline industry. British Airways' BABS, in fact, holds the schedules for 70 airlines, in addition to its own, and also provides the airline with facilities for payroll calculations, pensions, accounting, statistics, cost control, component control, flight planning and in-flight data analysis.

The system uses a vast network of communications links around the world consisting of more than 50 computers linked to 3,500 visual display units and 1,000 teleprinters in 650 cities. The network extends from Oslo and Helsinki in the north to Cape Town and Christchurch in the south, and east to west from Tokyo and Auckland to Los Angeles. BA has worked out that BABS represented 800 man-years to establish.

The system is equipped with four million characters of high-speed memory and more than 4,200 million characters of backing storage. BABS holds details of every flight for a year ahead and full booking details for some 15 million passengers a year.

The airline's offices, and those of many others, have access to the BABS system through a worldwide communications network of satellite, cable and microwave links operating at speeds of up to 9,600 bits per second.

Offices in such faraway places as Australia and South Africa receive replies to booking requests in two or three seconds. The computers in London handle such inquiries at the rate of 60 per second at peak times, and in total the system handles more than 1,250,000 messages every day. BA offices around the world can also make hotel reservations for passengers through BABS and can ask it for package-tour bookings and fares quotations. Later this year, each office with a computer terminal will be able to use the computer in London for the construction of fares, in the past a laborious and time-consuming task with enormous possibilities for error and therefore, loss of revenue for the airlines.

Modern telecommunications are expensive to develop and install, but once in and operating they have great potential for saving money as well as time. British Airways has estimated that its BABS system has reduced the costs per passenger for reservations from 12p in 1973 to 9.4p today. When the effect of inflation is considered, the latter figure drops still further to 5.9p.

Questions 1-10

Answer the following questions.

1. What are the two attractions mentioned for working for an airline?

   1) ______________ 2) ______________

2. What are the four main sections of airline communications?

   1) ______________ 2) ______________

   3) ______________ 4) ______________

3. What is radio used for?

   ____

4. What is teletype used for?

   ____

5. How many routine low-speed messages does Saudia pass every 24 hours?

   Off-peak travel season: __________ Peak travel season: __________

6. Before 1982, when Saudia was to install its own in-house computer, who helped it to deal with its reservation and who helped it for its engineering inventory?

   Reservations: ______________ where? ______________

   Engineering inventory: ______________ where? ______________

7. What is BABS?

   ____

8. It can be inferred from the passage that Saudia is now using its own computer system for, apart from reservations and engineering inventory, some other purposes. They are __________, finance, __________, and __________.

9. How many calls per day can the Jiddah office of Saudia answer?

   ____

10. How fast can most of these calls be replied to?

    ____

Question 11

Please fill in the table below.

	Number of Calls Answered Per Day	Percentage of Calls Replied to within 20 Seconds
Jiddah, Saudia		
Airline Industry Average	/ / / / / / / / / / /	

Exercise 5

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Tough Sensor Can Take the Heat

1 A new gas sensor made from a nickel's worth of materials can endure high temperatures, corrosion, vibrations, and exposure to water, according to its inventors at Argonne National Laboratory in Illinois. The tiny sensor detects a variety of gases.

2 Conventional silicon sensors do not work well at temperatures above 150°F. But Argonne's new sensor, made of ceramics and metals, is not affected by high temperatures. "The materials in this sensor behave well through a wide range of temperatures," says Michael Vogt, a control systems engineer at Argonne.

3 Vogt and his colleagues made the sensor by film-screening layers of ceramic and metal on a ceramic substrate, then firing the sensor in an industrial oven at more than 1,000°C. The Argonne researchers set out to build a sensor that would detect overheating computer components. Before an overheating component fails, and possibly ignites, epoxy in the circuit boards releases a gas. The Argonne sensor can detect this vapour and cut off power to the circuit.

4 The device senses gases by applying a steadily increasing voltage across its electrical leads and monitoring current spikes induced as gases react on the sensor's surface. Each gas reacts at a characteristic voltage, and the size of the current spike indicates the "signature" of several representative organic solvents.

5 The sensor could be used to monitor hydrocarbon emissions from cars; today's typical sensors only measure oxygen. The sensor could also monitor gases in industrial chemical processes.

Questions 1-4

Below is a table with information about the new gas sensor and the conventional gas sensor. Fill in the missing information.

	Temperature at Which They Work Well	Components	Uses
New Gas Sensor	a wide range of temperatures	2.	monitor hydrogen emission from cars and gases in industrial, chemical processes
Conventional Gas Sensor	1.	3.	4.

Questions 5-10

Below is a summary of the passage. Fill in the spaces with a maximum of three words from the passage.

A new sensor made of ceramics and metals can endure corrosion, vibrations, exposure to water, and __5__, while not affected by __6__. As __7__ reacts at a __8__, the device applies a steadily increasing voltage and monitors current spikes induced, __9__ of which indicates the concentration of the gases. Conventional sensors, on the other hand, do not work well at temperatures above 150°F and could be used only to __10__.

Questions 11-14

The following statements summarize some of the paragraphs of the passage. Write the number of the paragraph summarized in the spaces provided.

_______ 11. How the device senses gases

_______ 12. A brief introduction to the new gas sensor

_______ 13. Other uses of the new gas sensor

_______ 14. How the device was designed

Exercise 6

In this exercise, you will find a reading passage which is accompanied by some questions. Some of the questions will come before the passage; some will come after the passage. The suggested time for reading the passage and answering the questions is 20 minutes.

Questions 1-3

Look at the reading passage, and answer the following questions.

1. List the three elements that were formed on the Earth 4.6 billion years ago.
   1) ____________ 2) ____________ 3) ____________
2. What helps regulate atmospheric exchange and surface temperature?
   ____
3. What was the effect of "weathering" on Venus?
   ____

Model Atmosphere Shows Signs of Life

Life could exist on planets that are much farther from their stars than the Earth is from the Sun. Planetary scientists at NASA's Ames Research Center in California have developed models for climates on other planets that make the existence of life in other solar systems much more likely.

The scientists, James Kasting, O. Brian Toon and James Pollack, have increased by more than 75 million kilometres the distance an Earth-sized planet may be from a star and yet support life. The atmosphere on such a planet could be unlikely to support human life, but it could support some forms of life, according to the researchers. "We're saying that these planets may be habitable, but not necessarily inhabited," Kasting, an atmospheric physicist, told *New Scientist*.

The models suggest that the concentrations of carbon dioxide in the atmosphere would be enough to warm planets and prevent water from freezing as far away as the orbit of Mars from the Sun — an average distance of 228 million kilometres. The average distance of Earth from the Sun is 150 million kilometres.

In the past, scientists doubted that "civilizations" could exist in other solar systems because the chance of an Earth-like planet evolving is slim. Michael Hart of NASA's Goddard Space Flight Center in Maryland has calculated that if the Earth were 5 per cent closer to the Sun, its oceans would evaporate, or if it were 1 per cent farther away, glaciation would take over. Hart's work suggests that only a narrow range of orbits — within a few million kilometres either side of the Earth's orbit of the Sun — would provide a habitable environment in another solar system.

But the scientists at Ames have pushed the range of orbits for Earth-like planets by more than 50 per cent. Habitable planets could be found from 0.95 to 1.5 astronomical units, they say. One astronomical unit (AU) is the distance from the Earth to the Sun. 1.5 AU is about the distance from the Sun to Mars.

The work at Ames might also help to explain what planetary scientists call the "Goldilocks paradox". Earth and its two neighbouring planets, Mars and Venus, were formed at the same time, about 4.6 billion years ago, from the same ingredients, including water, carbon dioxide and nitrogen. But only Earth developed life. Mars is too cold. Venus is too hot, but Earth is just right, like Goldilock's porridge.

The scientists say that earlier models, including Hart's, failed to include the stabilizing effect of the exchange of carbon dioxide between the atmosphere and the silicate rocks in the Earth's crust. This exchange helps to regulate atmospheric and surface temperatures. Exchange of CO_2 also regulated temperatures in the early history of Venus and Mars before Venus became too hot and Mars became too cold.

In its first few hundred million years, Venus may have had a thin atmosphere and hot oceans, like the Earth, that were capable of supporting life. The scientists have developed a new model called "wet greenhouse" to explain how Venus evolved into its current hell-like state where clouds of sulphuric acid fill the sky and surface temperatures reach 460°C. The model challenges the generally accepted "runaway greenhouse" model that Fred Hoyle first suggested in the 1950s.

According to the "runaway greenhouse", Venus has always had a heavy atmosphere which traps the Sun's heat. In primordial times, the atmosphere was a mix of water vapour and CO_2. The water vapour would have risen to the upper atmosphere, well above the level at which water condenses. Ultraviolet radiation from the magnetically active young Sun would have split the water molecules into hydrogen and oxygen and the hydrogen would have escaped into space. The result would be a dry planet, with no oceans and high concentrations of CO_2 in the atmosphere.

But, say Kasting and his colleagues, there are two problems with this model. Where is the oxygen stored and why is there no surplus water? Escape of hydrogen from the stratosphere would have ceased when the level of water vapour in the lower atmosphere reached about 20 per cent of saturation. The stratosphere would have become dry but water should have remained in the Venusian atmosphere.

By adding a mechanism to recycle CO_2 on early Venus as happens today on Earth — the two objections can be met. The water carried by the lumps of rock from which Venus formed could well have condensed out to form oceans with at least one tenth of the volume of those currently on Earth. The oceans were hot, about 100°C but the pressure of the atmosphere would have prevented excessive evaporation.

An exchange of CO_2 occurred for several hundred million years between the atmosphere and carbonate rocks on the surface of the planet. The process, known as "weathering", reduced the density of the Venusian atmosphere to about that of the Earth. The thinner atmosphere allowed most of the hydrogen to escape. The remainder escaped more slowly over the next few billion years, so that Venus now has about 100,000 times less water than Earth. According to Kasting and his colleagues, the early interaction between the atmosphere and the surface rocks may also have locked up most of the planet's oxygen.

After the water was gone, exchange of CO_2 would have ceased and the level of CO_2 in the atmosphere would have risen causing a severe "greenhouse" effect. Clouds of sulphuric acid would also have evolved. On Mars, according to the model, carbonates were recycled for about a billion years but eventually, the exchange broke down because the planet was too small to retain its internal heat. The CO_2 has become trapped in carbonate rocks. The thin atmosphere caused the planet's surface to freeze.

Questions 4-13

The table below gives information concerning the planets. Use the reading passage to help you fill in the table. Some of the boxes have been filled in for you.

	Distance from the Sun	Effects of Distance on Planets	Periods of the Exchange of CO_2 Occurs	Reason of Breakdown of CO_2 Exchange	Surface Temperature
Earth	4.	6.	constantly	//////////	////////
Mars	5.	7.	9.	11.	freezing
Venus	no information given	8.	10.	12.	13.

4. ____________________ 5. ____________________

6. ____________________ 7. ____________________

8. ____________________ 9. ____________________

10. ____________________ 11. ____________________

12. ____________________ 13. ____________________

Unit Seven

Integrated Exercises
Các bài tập tổng hợp

Sáu bài trước lần lượt giới thiệu các đặc điểm, kỹ năng ứng phó v.v. đối với dạng đề của môn đọc IELTS, đồng thời cung cấp một lượng lớn bài tập có tính tập trung theo từng loại đề. Bài này bao gồm 12 bài đọc, các bài đọc đề cập đến các phương diện như khoa học tự nhiên, công nghiệp, nông nghiệp, y học, văn chương v.v., dạng đề đa dạng để mọi người luyện tập.

Trong bốn môn thi nghe, nói, đọc, viết của kỳ thi IELTS, đối với đông đảo các thí sinh không phải chuyên ngành tiếng Anh, môn dễ nhất hoặc có độ khó thấp nhất có lẽ là môn đọc. Tuy vậy, khi làm bài thi môn đọc, rất nhiều thí sinh vẫn chưa có sự chuẩn bị đầy đủ. Lấy việc ra nước ngoài học tập, nghiên cứu làm ví dụ, các trường đại học ở nước ngoài thường yêu cầu tổng số điểm là 6.5, không môn nào thấp hơn 6 điểm. Các trường đại học danh tiếng, một số chuyên ngành nào đó (như y học, luật học, ngôn ngữ học, văn học v.v.) yêu cầu tổng số điểm là 7 hoặc 7.5 điểm. Phần lớn các thí sinh không thể đạt trên 6 điểm ở các môn viết và nói (hai môn này chỉ có điểm chẵn), còn môn nghe thường không phải là điểm mạnh của các thí sinh Việt Nam. Vì vậy, đối với phần lớn thí sinh muốn đạt được tổng số điểm là 6.5 hoặc hơn, điểm môn đọc ít nhất phải đạt được 7.5. Xét theo tỷ lệ chính xác, ít nhất phải làm đúng 80% câu đọc.

Đối với các thí sinh có năng lực thực tế còn cách xa tỷ lệ này, nhất là những thí sinh chưa thể làm đúng một nửa số câu hỏi môn đọc, thì hai chương cuối (Intergrated Exercises và Practice Tests) trong cuốn sách này có độ khó quá lớn. Do đó các thí sinh này không nên thi IELTS ngay, mà nên đợi đến khi có thể đạt được tỷ lệ chính xác khoảng 60% ở môn đọc, tham dự một "lớp cấp tốc", sau đó hãy thi. Những thí sinh này có thể thông qua việc đọc một số bài đọc ngắn hơn, có độ khó thấp hơn một chút để nâng cao khả năng đọc.

Các bài viết trong cuốn tuần san "New Scientists" của Anh nhiều lần được dùng làm đề thi đọc IELTS. Bản điện tử của tạp chí này có địa chỉ trang web là: www.newscientist.com, mỗi ngày đều có một số bài phát biểu mới (trang web của một số tuần san mỗi tuần chỉ đổi mới một lần). Rất nhiều bài viết trong đó có độ dài khoảng ba bốn trăm từ, bằng một nửa, thậm chí là chưa đến một nửa độ dài của các bài đọc IELTS. Độ khó cũng không cao, rất thích hợp cho các thí sinh chỉ có thể làm đúng khoảng một nửa số câu hỏi môn đọc trong thời gian quy định. Sau đây là tiêu đề và nội dung tóm tắt của hơn mười bài đọc bên dưới tiêu đề Teenagers trong đề mục Special Report của tuần san "New Scientist". Những bài viết này đăng trên mạng quanh năm, có bổ sung nội dung mới, là những bài tập rất hữu ích giúp tăng cường kiến thức và nâng cao khả năng đọc tiếng Anh. Đọc các tiêu đề chính, tiêu đề phụ là một cách luyện tập rất tốt.

Smart Shoes Decide on Television Time

Sports shoes that know whether their wearer has done enough exercise to deserve time in front of the TV have been devised in the UK.

Teen Sex Abstinence Study Sparks Controversy

It suggests that encouraging teens to abstain from sex by boosting self-esteem has little effect, but critics say the study is flawed.

Teenagers Fail to See the Consequences

Research into juveniles' appreciation of ultimate outcomes is being used to support a ban on the US death penalty for under-18s.

Bullying Worse for Teens than for Kids

If you cannot prevent children being bullied, it may be better to let it happen before puberty rather than later, according to psychologists.

Teens on Sex

Why not train teens to teach their peers about the dangers of sexually transmitted infections and unwanted pregnancy?

Celebrity "Friends", Key in Teen Development

Worshipping a favourite star may be a healthy part of growing up, say psychologists, and this may have evolutionary origins.

Teen Brains Show Low Motivation

Adolescents really are less motivated than adults, reveal brain scans — this may contribute to risky behaviour, suggest researchers.

Teenagers Face Health Timebomb

Adolescents are the only age group whose health is getting worse, with rising obesity, binge-drinking and under-age sex, reveals a UK report.

Tabs on Teens

Parents there may soon be able to track their children's movements via their mobile phones.

Teenage Generation Is Biggest Ever

The youthfulness of the world's population carries health dangers, says a UN report, but also great economic opportunities.

Teen Brain Changes Increase Cigarette Addiction

The fine-tuning of the brain during adolescence may mean teenage smokers may develop more tenacious addictions than late starters, suggests a teen rat study.

Spotty Genes

Now grumpy teenagers can blame their parents for their zits.

Mother's Little Helpers

It's official, our kids really do take an incredibly long time to grow up. Meredith F. Small wonders whether an evolutionary trick designed to help the family out has backfired on today's parents.

Teen Angst Rooted in Busy Brain

The tantrums of adolescence may be triggered by a growth spurt in the cortex that makes it hard for teenagers to process basic information.

Peering into James Dean's Brain

What makes teenagers moody and impulsive?

Movie Smoking Encourages Kids to Light up

Glamorous on-screen smoking is the biggest single factor influencing teenagers to try cigarettes, suggests a new study.

Sau đây là bài cuối cùng trong loạt bài viết trên, các thí sinh có khả năng đọc có độ chính xác khoảng 50% thì hãy đọc, đồng thời mỗi ngày ít nhất phải đọc một bài viết có độ khó và độ dài giống như vậy.

Movie Smoking Encourages Kids to Light up

Watching movie stars light up on screen is the biggest single factor influencing teenagers to smoke, suggests a new US study.

Adolescents who had never smoked were almost three times more likely to then take up the habit if they had watched films packed with smoking scenes, compared to their peers who had seen films with the least amount of on-screen smoking.

"There was a tremendous impact," says research leader Madeline Dalton, at Dartmouth Medical School in Hanover, New Hampshire. "Movies were the strongest predictor of who would go on to smoke — stronger than peers smoking, family smoking, or the personality of the child."

"We know from past studies it's very rare for smoking to be portrayed in a negative light. Smokers [in movies] tend to be tough guys or sexy, rebellious women — which appeal to adolescents," she told *New Scientist.*

Dalton's colleague Michael Beach adds: "Our data indicate that 52 per cent of smoking initiation among adolescents in this study can be attributed to movie-smoking exposure."

"The effect is stronger than the effect of traditional cigarette advertising and promotion, which accounts for 'only' 34 per cent of new experimentation," notes Stanton Glantz, at the Center for Tobacco Control Research and Education, in an editorial accompanying the study published online in The Lancet.

Smoke Screen

The study began by recruiting over 2,600 US schoolchildren aged 10 to 14 who had never smoked. Each child was then asked if they had watched any of 50 movies randomly selected from 601 box office hits released between 1988 and 1999. The number of occurrences of smoking in each film was recorded by trained coders.

When followed up one to two years later, 10 per cent of the children had tried smoking. Those in the top quarter of exposure to movie smoking were 2.7 times more likely to have tried a cigarette than those in the lowest quarter of exposure. This effect was independent of other factors that might influence the child's smoking behaviour, such as friends or family smoking.

"It's more evidence that movies have a strong impact on adolescents," says Dalton. "Previous studies have suggested that smoking in movies influences adolescent smoking behaviour, but this is the first study to show that viewing smoking in movies predicts who will start smoking in the future."

Dalton, an expert in cancer risk behaviour in children, says a previous study by the team showed that children were more likely to smoke if their favourite actor smoked.

Movies which depict smoking should be given an adult rating or "R rating" in the US, suggests Glantz, which would mean that children under 17 could not see the film without a parent. "An R rating for smoking in movies would prevent about 330 adolescents [in the US] from starting to smoke and ultimately extend 170 lives every day," he writes.

Kỳ thi IELTS nói rõ là ba bài đọc trong đề thi đọc có độ khó tăng dần. Nhưng rất nhiều thí sinh cảm thấy không phải như vậy. Như đã nói ở trước, ba bài đọc này thường sẽ có ba chủ đề hoàn toàn khác nhau: khoa học công nghệ, khoa học đời sống (y học, động vật, thực vật v.v.), khoa học nhân văn. Ba chủ đề này không có thứ tự sắp xếp cố định. Ba bài đọc này đều có nguồn gốc từ các sách báo, tạp chí nguyên bản (không phải được biên soạn dành cho những người học tiếng Anh), mức khó về chữ nghĩa rất giống nhau. Độ dài khác nhau, nhưng đều nằm trong phạm vi 800 đến 1.000 từ. Nhân tố quan trọng nhất ảnh hưởng đến độ khó của bài đọc chính là chủ đề của bài đọc. Vì vậy, chúng tôi cho rằng các bài đọc không phải được sắp xếp theo thứ tự về mức khó. Cảm giác về mức khó của ba bài đọc khác nhau tùy theo mỗi người. Do kiến thức chuyên môn khác nhau, nên có thí sinh cảm thấy độ khó quả thật tăng dần, có thí sinh thì cho rằng giảm dần, có người thì cho rằng không có quy luật.

Trên thực tế, đa số các thí sinh có chuyên ngành không phải là tiếng Anh không thể hiểu thấu đáo ba bài đọc và trả lời 40 câu hỏi trong vòng 60 phút. Do đó, phải có chọn có bỏ, phải phán đoán được mức khó của ba bài đọc này, để quyết định thứ tự đọc bài đọc và làm bài thi. Làm bài đọc dễ nhất trước, làm bài khó nhất sau cùng. Phải đảm bảo tỷ lệ chính xác của hai bài đọc là 95%, bài đọc cuối cùng thì tùy theo thời gian, làm được bao nhiêu thì làm. Nếu không đủ thời gian, có thể làm một số câu "YES/NO/NOT GIVEN", những câu không thể dựa vào vận may khác thì đành bỏ qua.

Phán đoán mức khó của ba bài đọc, quyết định làm hai bài nào trước là một "kỹ năng ứng phó" dựa vào khả năng mới có thể sử dụng, phát huy. Hy vọng trong chương này người đọc có thể ý thức được "kỹ năng" này. Nói một cách đơn giản, là phải dành ra một hai phút để phán đoán chủ đề của bài đọc có gần với chuyên ngành của bạn hay không, nội dung chính của bài đọc là gì, có nên bắt đầu đọc bài đọc ngay hay là để đến cuối cùng mới đọc. Các thí sinh làm bài có tỷ lệ chính xác trên dưới 60% nên tăng cường khả năng này. Rất nhiều người trong số các thí sinh có chuyên ngành không phải là tiếng Anh ở trình độ này.

Những thí sinh làm bài có tỷ lệ chính xác là 80% hoặc hơn thường có thể làm xong tất cả các câu trong vòng 60 phút. Khả năng "lựa chọn lấy bỏ" này đối với họ là không cần thiết.

Exercise 1

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 10 minutes.

Earthquakes

1 Every year earthquakes are responsible for a large number of deaths and a vast amount of destruction in various parts of the world. Most of these damaging earthquakes occur either in a narrow belt which surrounds the Pacific Ocean or in a line which extends from Burma to the Alps in Europe. Some of the destruction is directly caused by the quake itself. An example of this is the collapse of buildings as a result of vibration. Other damage results from landslides, tsunamis (large ocean waves) or major fires which are initiated by the quake.

2 There are about a million quakes a year. Fortunately, however, not all of them are destructive. The intensity of an earthquake is measured on the Richter Scale, which goes from 0 upward. The highest magnitude recorded to date is 8.9. Major damage generally occurs from quakes ranging upwards from 6.0. Exceptions to this are those whose epicentres are located far from inhabited areas.

3 The actual cause of the quake itself is the rupturing or breaking of rocks at or below the earth's surface. This is produced by pressure which scientists believe may be due to a number of reasons, two of which are the expansion and contraction of the earth's crust and continental drift.

4 In order to minimize the damage and to alleviate some of the suffering resulting from earthquakes, scientists are working on ways to enable accurate prediction. Two of the instruments presently in use to achieve this goal are seismographs and tiltmeters. The former records any shaking of the earth; by means of calculations seismologists can accurately indicate the exact time, location and size of an earthquake. The latter, as the name suggests, is used to record any changes in the tilt of the land.

Questions 1-5

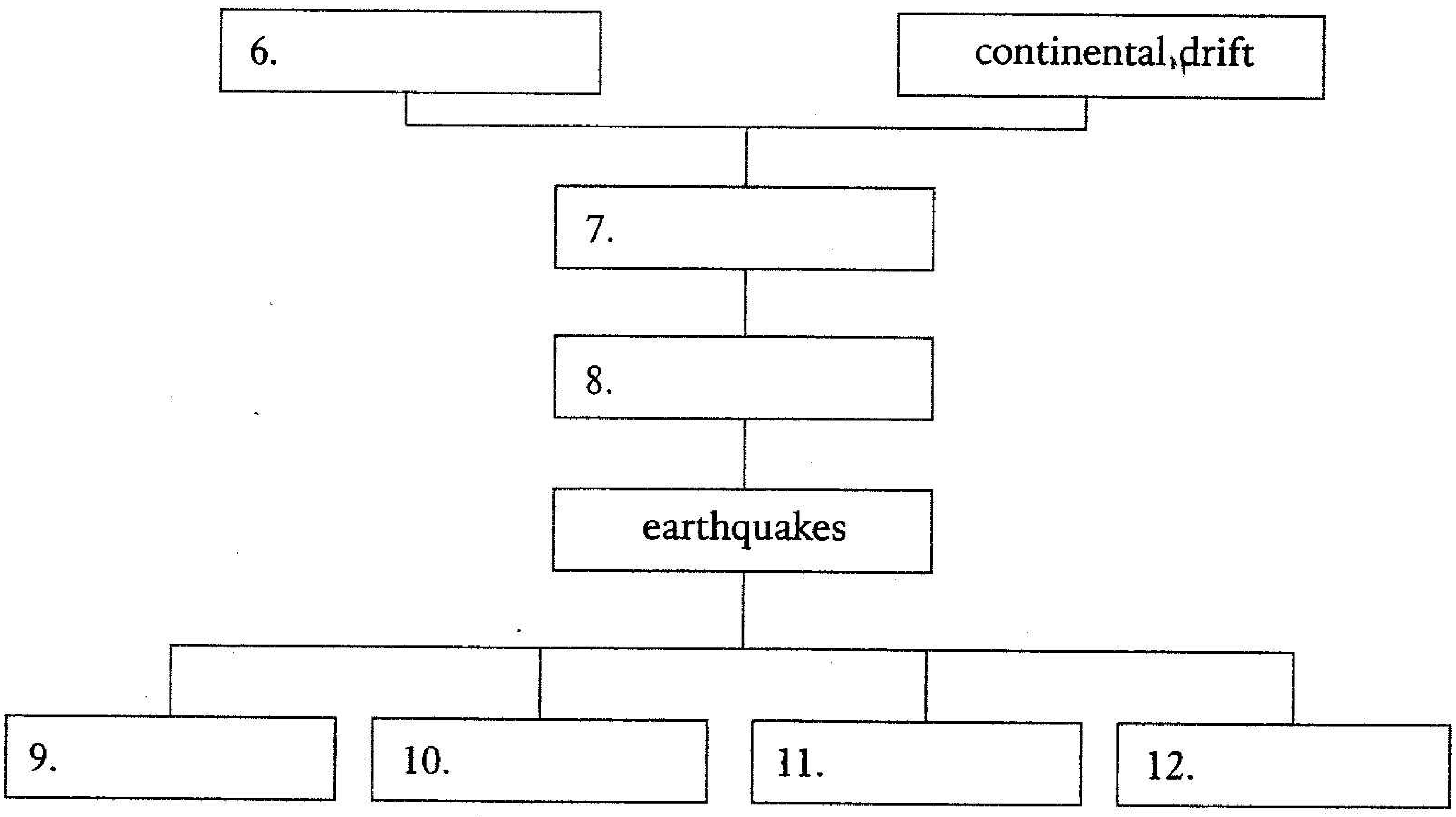
Choose from the list in the following box the main title of the passage and the title of each of the four paragraphs of the passage.

1. The main title: __________
2. Title for 1st paragraph: __________
3. Title for 2nd paragraph: __________
4. Title for 3rd paragraph: __________
5. Title for 4th paragraph: __________

- A. Earthquake Zones
- B. Earthquake Statistics
- C. Continental Drift
- D. Earthquakes
- E. Earthquake Instrument
- F. The Cause of Pressure
- G. The Cause of Earthquake
- H. Earthquake Epicentre
- I. Earthquake Destruction
- J. The Richter Scale
- K. Predicting Earthquake

Questions 6-12

Using words or phrases from the passage, fill in the boxes in the following diagram to indicate the possible sequences of events before and after an earthquake.



Questions 13-20

Please indicate whether the following statements are true or false according to the information contained in the reading passage by putting a T or an F in the spaces provided.

______ 13. Pressure occurs as a result of expansion and contraction of the earth's crust and continental drift.

______ 14. Pressure results from the rupturing of rocks below the earth's surface.

______ 15. Earthquakes result from rocks below the earth's surface rupturing.

_______ 16. Expansion and contraction of the earth's crust and continental drift are believed to be the indirect causes of earthquakes.

_______ 17. The collapse of buildings, landslides, tsunamis and fires can all be caused by earthquakes.

_______ 18. Earthquakes are produced by the rupturing of rocks below the earth's surface.

_______ 19. Earthquakes produce rupturing of rocks below the earth's surface.

_______ 20. The rupturing of rocks below the earth's surface is due to pressure which causes continental drift and expansion and contraction of the earth's crust.

Exercise 2

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 20 minutes.

The Life Cycle of a City

Already more than 20% of mankind live in urban areas with populations greater than 100,000, and this figure is expected to increase to at least 40% by the year 2000. The rural-urban population shift in the US (Fig. 1) typifies the trend to urbanization in a developed country. But this trend is not limited to developed countries. In developing countries too (Fig. 2), where the population is still predominantly rural, rapid urbanization is occurring. In fact, urbanization in developing countries is taking place more rapidly than that in developed countries. In the former, the population of large cities is doubling every 10 to 15 years, and that of many urban slums every 5 to 7 years.

These major population shifts within a country or throughout the world — both in developed and developing countries — affect the life cycles of cities. Jay W. Forrester (1969) has developed a crude computer model (Fig. 3) for an urban system in an industrialized nation. He analysed a hypothetical city to see how factors such as new and old industry, worker employment, managerial-professional employment and housing interacted over a period of 250 years. Data for each variable were collected, and the projected changes were calculated and plotted with the aid of a computer. The model shows that after a slight lag phase (while initial colonizers are building and slowly expanding the population), there is a dynamic growth phase (the "J curve") as industry, housing and employment increase dramatically for a number of years.

employment for the working class, and they move outward into the second ring of housing. Middle and upper classes then develop a new housing ring further from the inner city as stagnation increases.

Forrester's preliminary and admittedly crude model shows that the normal practice of raising local taxes may be self-defeating, in that it drives out persons and industries capable of supporting the city. Building expensive motorways and mass transit systems from the suburbs to the inner city can also be counterproductive by making the flight to the suburbs easier. Allowing old housing to stand, or converting it to low-rent housing projects, may also be self-defeating in the long run. The migration of additional underemployed persons into a city is controlled by the availability of housing. By removing old housing and refusing to replace it, a city can stop or slow migration of the unskilled, and at the same time provide space for new industries, which can then generate jobs or taxes for the benefit of existing unemployed citizens.

Questions 1-4

Answer the questions.

1. Since when has half or more of the US population lived in urban areas?

____

2. In what countries is the process of urbanization faster?

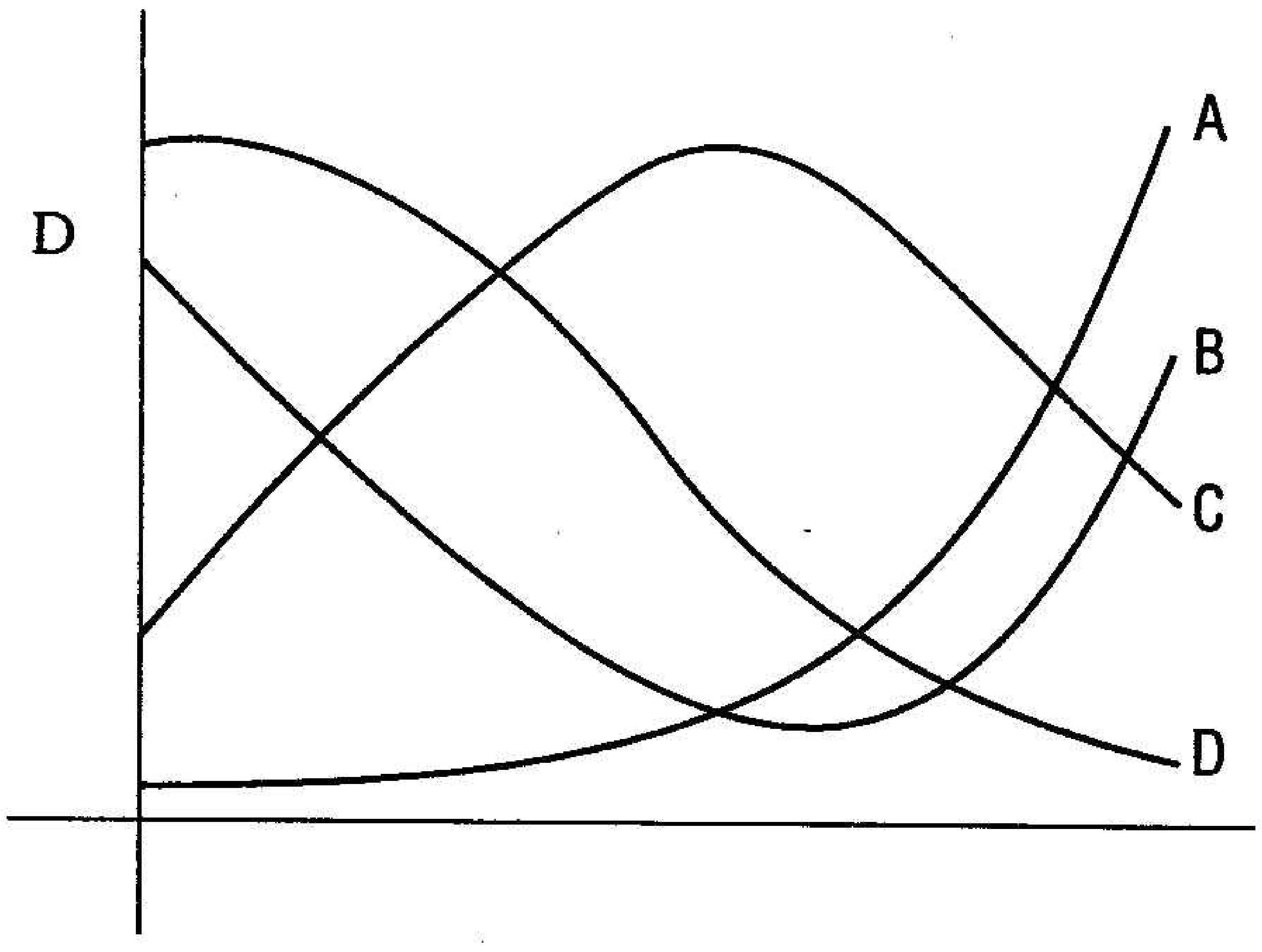
____

3. In 1980, approximately how many people lived in urban areas in developing countries?

____

4. Which one of the curves in the model graph is a J curve? Please tick one letter.

A B C D



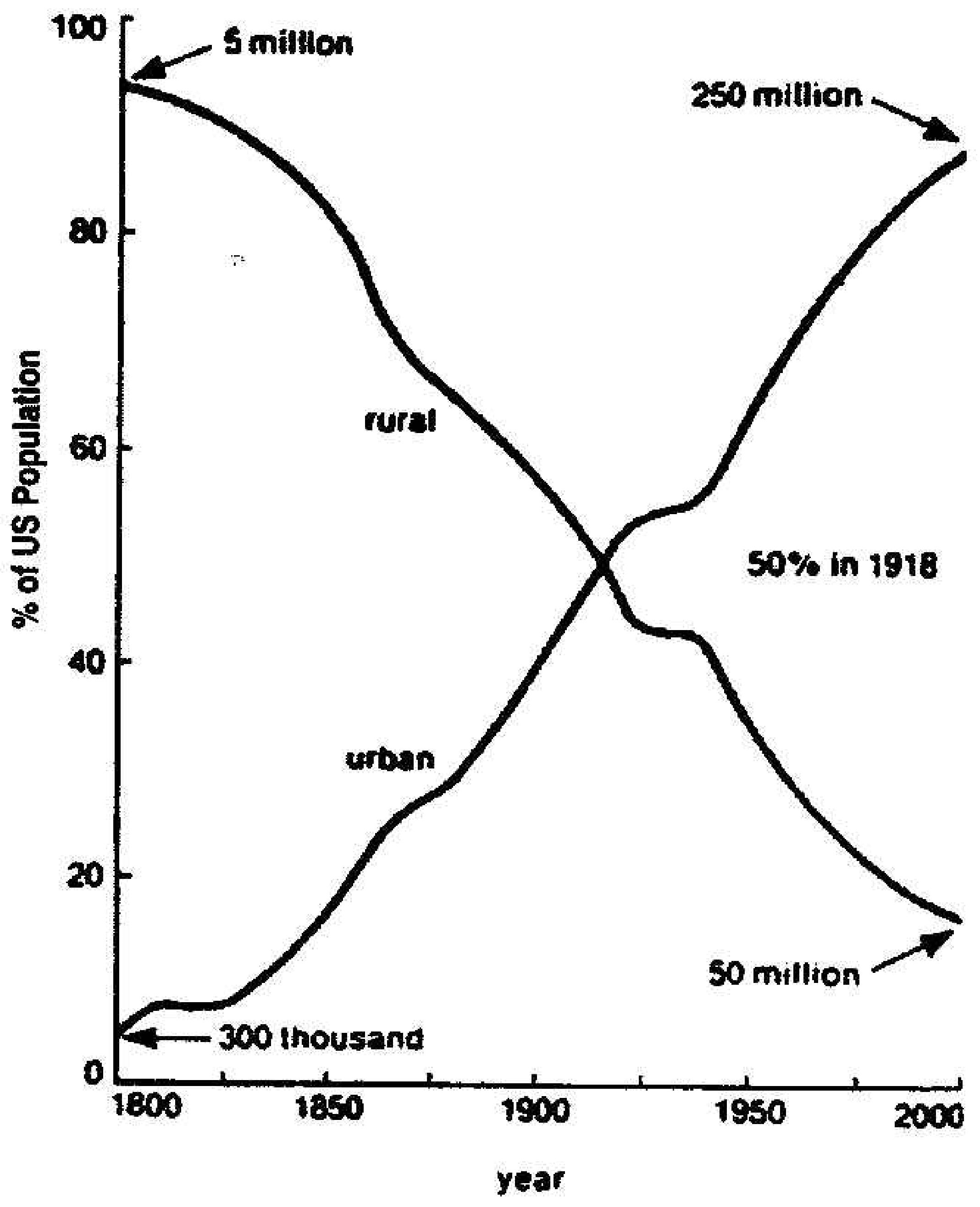


Fig. 1 The Rural-urban Shift in the US 1800-2000

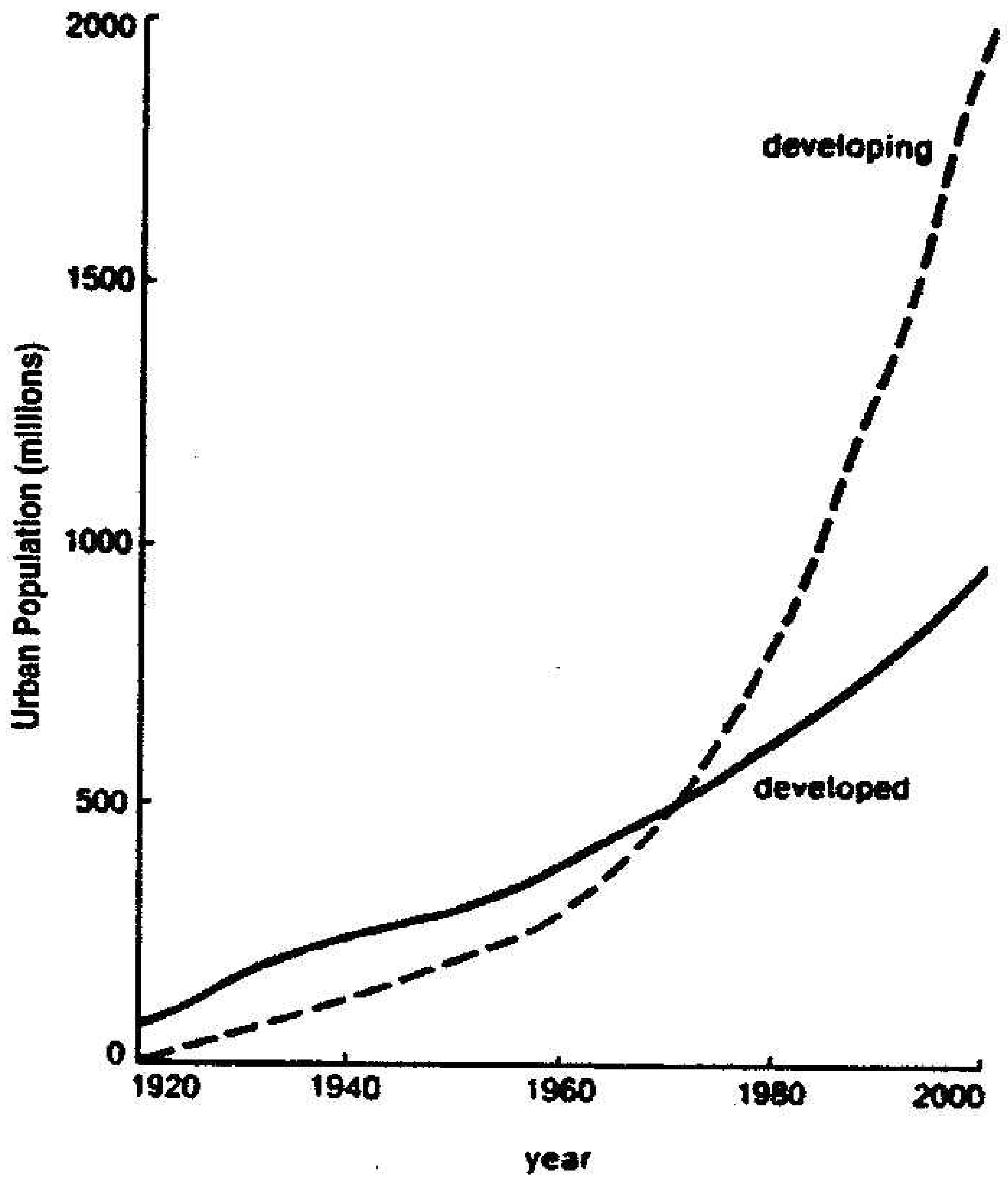


Fig. 2 Urbanization in Developed and Developing Countries

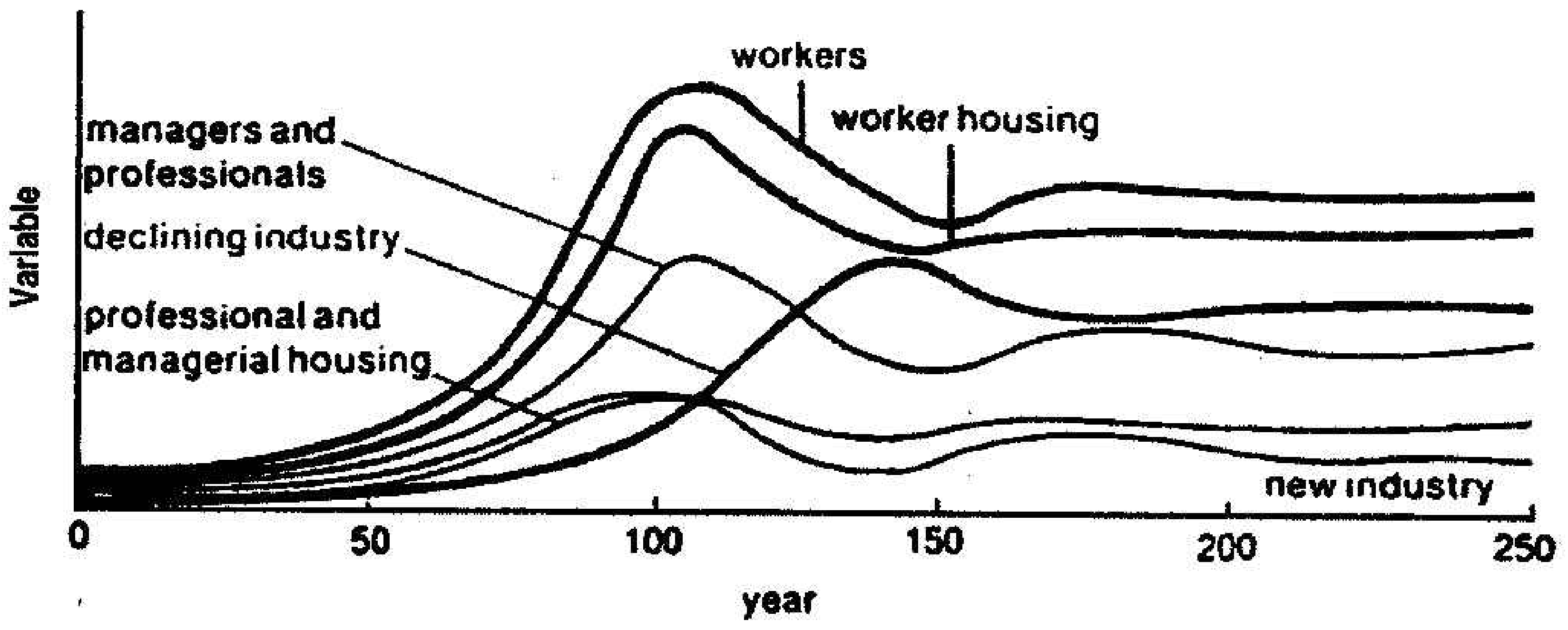


Fig. 3 A Computer Model of the Life Cycle of a City

The short-term, economically-motivated decisions made in this growth phase often have undesirable long-term effects. The original housing deteriorates, and new affluence and the availability of cars and other forms of transportation enable the managerial and skilled labour classes to build a new ring of houses outside the old city. The availability of vacated housing in the now deteriorating inner city allows an influx of unskilled workers, mostly from the rural areas (or, in the case of some developed countries, unskilled immigrants from developing countries). This occupancy by newcomers prevents the demolition of old housing, and further hinders industrial and business expansion within the city. Unemployment rises, generating welfare expenditure, but a reduced tax base from which to finance such expenditure. So local business taxes are raised, and the remaining landowners flee the city to avoid high taxes. This further decreases the likelihood of new industry, and unemployment rises again.

The stage is now set for the second phase of deterioration. The oldest inner city housing eventually deteriorates to the point where it must be demolished. It is usually replaced with housing and office buildings for managerial and professional workers. This provides little

Questions 5-14

In the left column below are the phases in The Life Cycle of a City as described by Forrester (A-L). Put the phases in chronological order in the blanks provided in the column on the right. Some of the blanks have been filled in for you.

A. The original housing deteriorates.
B. The remaining landowners flee the city.
C. A slight lag phase.
D. An influx of unskilled workers.
E. A dynamic growth of industry, housing, and employment.
F. A new ring of houses outside the old city is built.
G. Local business taxes are raised.
H. Working class people move outward into the second ring of housing.
I. Unemployment and welfare expenditure rise.
J. Old inner city houses are demolished and replaced by office buildings.
K. Unemployment rises again.
L. A new housing ring is developed further from the inner city.

5. Phase 1: ______
6. Phase 2: ______
7. Phase 3: ______
Phase 4: *F*
8. Phase 5: ______
9. Phase 6: ______
10. Phase 7: ______
11. Phase 8: ______
Phase 9: *K*
12. Phase 10: ______
13. Phase 11: ______
14. Phase 12: ______

Questions 15-16

Answer the questions.

15. How long does the slight lag phase last approximately?

____

16. What affects the life cycles of cities the most? (*Answer in three words.*)

____

Questions 17-21

If the author agrees with Forrester's model, would he support or reject the following ideas? Please tick the appropriate letter.

	Support	Reject	Can't Be Inferred from the Text
17. raising taxes	A	B	C
18. building motorways	A	B	C
19. converting old houses	A	B	C
20. demolishing old houses	A	B	C
21. increasing urban population	A	B	C

Exercise 3

In this exercise, you will read a passage and answer the questions that follow. The suggested time for reading the passage and answering the questions is 20 minutes.

A Sense of Crisis

Around the world, governments see violence in schools as a growing problem.

The subject is on the agenda at a meeting of G8 education ministers in Japan in April, according to the European Commission, which is coordinating efforts by member governments of the European Union to deal with the issue. UNESCO, the United Nations' educational body in Paris, is preparing an action plan. And the US administration is turning schools into high-tech fortresses in its determination to defeat the problem.

Many educators, however, say governments are missing the point, which Kisa Savolainen of UNESCO says is that violence "is a problem of society reflected in the schools," and that schools are ill-equipped to deal with the problem on their own.

Mrs. Savolainen, director of UNESCO's department for culture and peace, wondered how the situation would improve so long as some governments spend more money on prisons than schools, while domestic violence remains a daily reality for many children, or while teachers in Africa, Latin America and elsewhere continue to subject children to corporal punishment.

Nor does the American technological response do anything more than treat the symptoms, she said. It reinforces the idea in children's mind that "the whole structure of society is based on violence".

Karen Colvard, senior programme officer with the Harry F. Guggenheim Foundation, which studies violence in societies, said that the stringent security introduced in inner-city high schools in New York and elsewhere played more to public misinformation that the world is meaner than it actually is. She said the real issue was the poor quality of education in those schools.

"The board of education should have other priorities," she said. "It should be paying more attention to educational issues, which will have a bigger impact in the long run."

While violence clearly is an impediment to education, a response wholly based on security considerations creates an environment that is not conductive to learning, according to an educator in New York, Peter Lewis. In a study for the American Anthropological Association, he described the oppressive atmosphere of a typical inner-city school: the crackle of guards' walkie-talkies, the constant sirens and alarms, flashing strobe lights, beeps from metal detectors and the constant yelling of violent invective derived from rap songs.

Nevertheless, following the killings at the Columbine High School in Littleton, Colorado, and other shootings last year, authorities in the United States are spending millions of dollars on alarm and video systems, metal detectors, physical barriers and uniformed guards — money that many educators say would have been better spent on teachers, books and better buildings.

Some educators also advocate counselling and tutoring programmes, or childcare programmes to prevent young students from being left on their own for hours.

François Marchand, president of a French institute for research into non-violent resolution of conflict, recommends that children should be encouraged to understand aggressive instincts through role-playing, which American educators call "peer mediation". The children "have to be caught young," Mr. Marchand said. "By the time they get to high school, it becomes not impossible, but a lot more difficult."

But there is considerable debate about the value of such conflict resolution programmes. Some teachers believe they help institutionalize violence and are yet another distraction from the main business of teaching.

Governments do not seem to know how to deal with the crisis, which affects both rich countries and poor. If there is conflict or violence in society, it will inevitably be reflected in the schools.

Mrs. Savolainen said there is some promise in a multipronged approach in the Netherlands, for example, where the education, social affairs and culture ministries are seeking a coherent solution.

Before the Columbine High School shooting last year, 87 per cent of American schools were considered safe and had little or no security, according to a report by the National Center for Education statistics in 1997, the latest available.

Schools in the roughest neighbourhoods or with the highest proportion of minority enrollment reported the most crime, but overall the incidence of violence affecting 12th graders had remained constant for some 20 years.

US data show that tragedies such as the Colorado killing and other serious crimes are still extremely rare and are generally not on the rise, despite public perception to the contrary. But children are far more likely than 20 years ago to be killed in the streets or in their homes. The reason for this is the crack cocaine epidemic that began in the mid-1980s.

According to the National Institute on Drug Abuse in the United States, about 3.6 million Americans are chronic users of cocaine. More worrisome, the institute found, more than 3 per cent of eighth graders had tried the drug at least once.

Most crack users buy the drug a single hit at a time, necessitating a network of street dealers, runners and messengers. These tasks are often performed by children, who can more easily escape police surveillance. Many routinely carry guns.

In the United States, the National Center for Injury Prevention and Control found a couple of years ago that nearly 6 per cent of high school students carried concealed handguns. Weapons are considered cool in a gang culture that is glamorized by the media and by popular idols who rap about violence.

However, most killings occur in inner-city areas where crack cocaine is prevalent and firearms easy to come by. The centre found that less than 1 per cent of all homicides involving children aged 5 to 9 occurred in or around school. The real problem then seems to be not violence in schools but the easy availability of guns.

In France, too, where education has for long been seen as an essential tool for civilization and assimilation, educators agonize about violence in the classroom, but firearms are not a problem. Last autumn, teachers published several books decrying conditions in the classroom. But the Ministry of Education says that fewer than 40 schools have problems with serious violence.

Because they are given extra government resources, schools in problem zones afflicted by crime and high unemployment — such as Chanteloup-les-Vignes, west of Paris — are often havens of relative civilization. Usually they admit children with no questions asked about their parents' legal status — a contrast with the United States, where some illegal immigrants are afraid to send their children to school for fear of detection.

Even if they come from safe home backgrounds, most children are exposed to vicarious violence through television, computer games and even rap music. By the time they leave school, most children have spent more time in front of the television than in class. According to a report by the American Medical Association, as long ago as 1992 — the problem is doubtless worse today — they will on average have witnessed 40,000 murders and 200,000 other acts of violence by the age of 18.

George Gerbner, who founded the Cultural Indicators project in 1968 to study violence in the media, coined the phrase "happy violence" to describe unreal screen violence that appears painless and leads to a happy ending. For Mr. Gerbner, exposure to such violence "breeds aggressiveness in some and desensitization, insecurity, mistrust and anger in most".

Schools, it seems, are no more capable than anyone else of dealing with the problems created by such commercialized and globalized "culture" that now reaches people anywhere from American inner cities to the developing world.

Questions 1-5

In the reading passage, many educators voiced their concerns about school violence and give their opinions on this issue. Match the following educators (1-5) with the views (A-E) they hold.

1. François Marchand
2. George Gerbner
3. Karen Colvard
4. Kisa Savolainen
5. Peter Lewis

A. Too much time spent in front of the television may result in aggressiveness in children.
B. School security systems won't cure the problem.
C. Children's aggressive tendency should be checked early.
D. School education should be held responsible for violence that occurred in schools.
E. Violence in schools is fundamentally caused by ills of society.

Questions 6-14

Do the following statements agree with the view of the writer in the reading passage? Please write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement contradicts the view of the writer;*
NOT GIVEN	*if it is impossible to say what the writer thinks about this.*

6. Schools cannot solve the problem of violence because they do not have the necessary high-tech equipment.
7. Children in many parts of the world suffer from physical punishment.
8. The board of education should give priority to educational issues.
9. Counselling programmes have helped in preventing children from resorting to violence.
10. Non-violent conflict resolution programmes work better with high school children.
11. The problem of violence in the classroom is worse in the developed countries.
12. After the Columbine High School shooting, many American schools became equipped with security systems.
13. In the United States, many high school children carried handguns to protect themselves from violence.
14. The French schools are more tolerant of children's home backgrounds than the American ones.

Exercise 4

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Carcinogenic Dye in Hundreds of Food Products

A More than 350 food products were swept off supermarket shelves yesterday in the biggest safety scare since the BSE crisis.

Fresh and canned foods, ready meals and cooking sauces were removed from sale on the orders of government food watch-dogs after the chance discovery in Italy 11 days ago of an illegal, potentially cancer-causing dye ingredient in a bottle of Crosse & Blackwell Worcester sauce.

B All the foods affected came from one supplier, Premier Foods, which said it had been advised by the Food Standards Agency that the levels of the dye Sudan 1 that had been detected "present no immediate risk to health".

The alert relates to 357 products with Worcester sauce flavouring, and the figure may rise. It follows 18 months of more low-level warnings involving 200 products — including pickles, cooking oils and sauces — to consumers, retailers, manufacturers and importers over the inclusion of the dye, which is banned in Europe. But it is used in some very long-life foods and in many cases is thought to involve batches imported before a toughening of checks in July 2004.

C The scale of the recall is likely to send shockwaves through the food industry. Consumers are demanding ever greater information about the food they eat and the uncomfortable truth is that the dye seems to have been present often at undetectable levels.

D The food agency's chief executive, Jon Bell, last night sought to reassure the public. "Sudan 1 could contribute to an increased risk of cancer. However, at the levels present, the risk is likely to be very small but it is sensible to avoid eating any more. There is no risk to immediate health."

Dr. Bell said: "The agency is working with the industry to ensure that any remaining affected products are speedily removed. Because of the widespread use of this Worcester sauce to flavour other foods, we may find further affected products."

E Toxicology professor John Henry of St Mary's Hospital, London, said Sudan 1 "is very easy, cheap to manufacture. It has been present in shoes, used to colour petrol, chemicals, shoe polishes, things like that. It is perfectly safe in these situations but to eat it is not an ideal thing."

"There is no evidence it has caused disease in humans ever. This is a precautionary measure. Because it causes cancer in some studies of animals, it is something you don't want in your food. It is not an essential food product."

F Professor Tony Dayan, a former professor at St Bartholomew's Hospital, London, said: "The evidence all points to the fact it ought not to be in humans generally. I am not suggesting people should be extremely worried because they may have eaten what may or may not have been a contaminated product. The dose would have been extremely small but from a public health point of view or community view at large, you don't want that potentially very dangerous material in an ordinary item of the diet."

G Shares in Premier on the London Stock Exchange fell 7.75p yesterday to 280p. There is a wide range of products involved. Richard Matthews, product liability expert at the law firm Eversheds, said: "It is truly an industry problem, affecting all the major supermarkets."

"Premier and its ingredient suppliers will be concerned about their reputation ... not to mention the very large claims that may flow up the supply chain. There will also be queries as to why the quality control procedures did not detect the presence of Sudan 1."

H Premier Foods is said by the food agency to have obtained chilli powder used in the sauce from the Essex-based spice and herb specialist Unbar Rothon, which in turn received it from East Anglian Food Ingredients.

Premier Foods did not name its suppliers but said: "The ingredient was supplied to Premier from a reputable UK source, who themselves had been supplied by another UK company. Premier received written assurances that the chilli powder did not contain Sudan 1."

"We believe the responsibility for any financial costs associated with the recall will rest with our suppliers and their insurers."

Questions 1-6

Answer the following questions.

1. What was the biggest food safety scare before the present one?
2. Give two examples of food containing a cancer-causing dye ingredient.
3. Who issued the orders to remove the affected foods from sale?
4. In what way was the illegal ingredient detected?
5. Who is the supplier of the foods affected?
6. What is the name of the ingredient?

Questions 7-11

The reading passage has eight sections A-H. Which sections state the following information? Write the appropriate letters A-H in boxes 7-11 on your answer sheet.

7. The food industry will probably be greatly affected by this crisis.
8. There is no proof that Sudan 1 has caused diseases in human beings.
9. More affected products might be found due to the widespread use of the dye.
10. The food scare caused the shares of Premier Foods to fall.
11. The suppliers of the ingredient and their insurers will be responsible for the financial costs entailed.

Exercise 5

In this exercise, you will read a passage and answer the questions that accompany the passage. Some of the questions will come before the passage; others will come after the passage. The suggested time for reading the passage and answering the questions is 20 minutes.

Questions 1-6

The following reading passage has seven paragraphs A-G. Choose the most suitable headings for paragraphs B-G from the list of headings below. Write the appropriate numbers (i-x) in the spaces provided.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i)	Sustainable fishing techniques
(ii)	Regulating fishing activities
(iii)	Gregorio Dano
(iv)	Alternative sources of income
(v)	Peculiar creatures
(vi)	Tiger-Tail seahorses
(vii)	Medicinal use of seahorses
(viii)	Stephen Casey's effort
(ix)	Getting all parties to work together
(x)	Finding ways to protect seahorses

Example: Answer:
Paragraph A *iii*

1. Paragraph B __________
2. Paragraph C __________
3. Paragraph D __________
4. Paragraph E __________
5. Paragraph F __________
6. Paragraph G __________

Saving the Seahorses

A Gregorio Dano is a seahorses fisherman, and he's not happy. A decade ago, he and the other subsistence fishers from the central Philippine village of Handumon supported their families by collecting dozens of seahorses a day from the coral reefs of nearby Danajon Bank. But as the six-month-long seahorse-fishing season begins next month, Dano will be lucky to catch a half dozen of the elusive fish in a full night's diving, enough to buy only a day's worth of rice.

B Seahorses and their relatives, the only animal species whose males, rather than females, become pregnant, are popular with home collectors and public aquariums alike. Since the charismatic fish die easily in captivity, they must be replaced frequently from the wild. Dried seahorses are prized by practitioners of traditional Chinese medicine, in remedies for everything from asthma to impotence. As disposable income in China has risen over the last decade, so too has demand for seahorse-based cures. That has caused overfishing at Danajon Bank and throughout the fishes' range, leading to the loss of at least 20 million wild seahorses a year. Populations have been plummeting everywhere seahorses are fished — in sea grass beds and mangrove stands from Florida to Ecuador, and on coral reefs from India to Vietnam.

C Last week 35 researchers and representatives of major public aquariums from around the world met at Chicago's John G. Shedd Aquarium to discuss what can be done to reverse the trend. "We've seen population declines of 50 per cent over the last five years, and that's unacceptable," says Amanda Vincent, a conservation biologist at Montreal's McGill University and co-founder of Project Seahorse. One way to reduce aquariums' dependence on wild stocks is to improve captive breeding techniques. Jorge Gomezjurado, a biologist at San Francisco's Steinhart Aquarium, has spent the last year trying to raise *Hippocampus ingens*, the Giant Pacific seahorse. Prized as the largest of the seahorses at up to 12 inches long, *H. ingens* is also one of the trickiest to breed. Like all seahorses, they're fussy eaters, and in captivity they're susceptible to disease. By experimenting with food supplements, Gomezjurado has managed to raise three successive generations.

D Another researcher, a Ph.D. candidate at the London Institute of Zoology named Stephen Casey, has been studying the six-inch-long Tiger-Tail seahorse (*H. comes*), the most heavily exploited species on the Danajon Bank. Casey spent six weeks in Handumon, going out with seahorse fishers nightly to collect specimens. He paid the fishers the going rate for their catch, a few pesos each, which allowed him to sample without further depleting the population. His research will help determine whether seahorses can move from one spot on a reef to another. Adults rarely stray more than a few feet from their small home range, but juveniles might be transported to distant areas by waves or currents. If so, the progeny of an isolated pocket of reproducing adults would spread out, recolonizing distant reefs that have been depopulated by fishing.

Exercise 5

In this exercise, you will read a passage and answer the questions that accompany the passage. Some of the questions will come before the passage; others will come after the passage. The suggested time for reading the passage and answering the questions is 20 minutes.

Questions 1-6

The following reading passage has seven paragraphs A-G. Choose the most suitable headings for paragraphs B-G from the list of headings below. Write the appropriate numbers (i-x) in the spaces provided.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

	List of Headings
(i)	Sustainable fishing techniques
(ii)	Regulating fishing activities
(iii)	Gregorio Dano
(iv)	Alternative sources of income
(v)	Peculiar creatures
(vi)	Tiger-Tail seahorses
(vii)	Medicinal use of seahorses
(viii)	Stephen Casey's effort
(ix)	Getting all parties to work together
(x)	Finding ways to protect seahorses

Example:	Answer:
Paragraph A	*iii*

1. Paragraph B ____________
2. Paragraph C ____________
3. Paragraph D ____________
4. Paragraph E ____________
5. Paragraph F ____________
6. Paragraph G ____________

E The Shedd Aquarium is tackling the depopulation problem from a different angle. Together with Project Seahorse, Shedd's merchandizing department developed a project with the Handumon villagers to lessen their dependency on seahorses. The Shedd gift shop now stocks 34 different products made by Handumon fishers and their families. Straw beach mats and handbags with seahorse motifs are big sellers. Dano and his wife have gone into business making wooden diving goggles, sold at the Shedd gift shop for $7, and have earned enough to get out of debt and buy food and medicine for their six children.

F Project Seahorse is also encouraging traditional Chinese medicine practitioners to identify alternatives to seahorses, and the researchers are helping villagers to develop sustainable fishing techniques. The villagers have established an 80-acre "no fishing" zone around Handumon. Populations of both seahorses and other species have rebounded so well that the idea is spreading to other villages, says Philippine biologist Marivic Pajaro, though the fish suffered a setback a year ago when the night watchman sneaked away to attend a fiesta and the area was poached of seahorses.

G As the workshop concluded last week, Vincent said she was more hopeful than ever before that seahorse decline can be reversed before disaster strikes. She now hopes to get all of the "stakeholders", including fishers, traders, medical practitioners and biologists, to meet together and work out how best to manage seahorses so that all parties — including the fish — get what they need. "Fish are seen as food, not wildlife," says London Zoo curator and Project Seahorse co-founder Heather Hall, summing up the difficulty of preserving underwater species. "We're just lucky that seahorses are about as cute as you get in the fish world." Those good looks may be what eventually saves them in the wild. The researchers hope that less popular but equally threatened species that share their watery homes may be saved in the bargain.

Questions 7-13

Do the following statements agree with the writer of the passage? Please write

YES	*if the statement agrees with the writer;*
NO	*if the statement does not agree with the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example: Answer:

The Shedd Aquarium is located in the United States. *YES*

7. Because there are fewer seahorses to be caught, Dano and his family are trying new ways to support themselves.
8. Seahorses are concentrated in sea waters in Southeast Asia.
9. *Hippocampus ingens* is a breed of seahorse that has the largest population.
10. Seahorses don't migrate.
11. Efforts to save seahorses so far are fruitless.
12. Seahorses are very picky about their food.
13. Though the populations of seahorses are decreasing, scientists believe that seahorses will survive.

Exercise 6

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Deadly Illusion Brings Death on the Road

Children are being killed on Britain's roads because of an optical illusion, warn researchers at the University of Aberdeen. The illusion fools drivers into underestimating how long it will take them to stop, and by the time they discover their mistake it is too late to avoid an accident.

About 50 children are injured on Britain's roads every day. Investigators looking at this problem have tended to blame children's inexperience and carelessness. But the researchers at Aberdeen suggest that the problem lies with the drivers. Doug Stewart of the university's engineering department says that the optical illusion is responsible for more than half the injuries to children on the roads.

People normally judge the time it will take an approaching object to reach them by the rate at which its size increases, a phenomenon called optic flow. This is adequate for catching a ball or ducking a projectile, Stewart says, but for car drivers it is only effective in the final second or so before collision. At speeds of 50 kilometres an hour, which are typical for traffic in towns, it takes around 3 seconds to stop a car.

Stewart and his colleagues Chris Cudworth and Rely Lishman say that instead drivers judge the time before a collision by subconsciously measuring the angle between the top and the bottom of the pedestrian's image. In the absence of any other clue, they assume that the pedestrian is an adult and judge the distance accordingly.

If the pedestrian turns out to be a child, this assumption can be lethal, as it leads drivers to believe the child is farther away than it really is. By the time the error has become apparent, it can be too late for the driver to avoid hitting the child.

Stewart and his colleagues conducted a series of tests in which volunteers acted as drivers in a computer simulation of a car approaching a pedestrian. In the test, volunteers were presented with a child one metre tall and an adult 1.8 metres tall. The volunteer "drivers" were asked to stop at a safe distance in front of the pedestrian.

Describing their results in the journal *Perception*, the researchers say that drivers were more likely to make errors when the image was a child's. They also found that the driver's height above the road influenced the number of errors. A driver sitting 1.8 metres above the road was less likely to misjudge the distance than one sitting one metre above the road.

This seems to be borne out by the road accident statistics. Cars are two to three times more likely than lorries to hit children, when the number of each type of vehicle on the road is taken into account. Lorry drivers sit higher up than car drivers.

Stewart says that the risk of drivers making potentially fatal errors can be reduced by providing visual cues for drivers about the size of the object they are approaching. Britain has one of the worst child safety records in Europe. One reason, says Stewart, is that other European countries have more zebra crossings, and that the markings on the road help drivers to distinguish between a child and an adult.

Britain's zebra crossings are gradually being replaced by pelican crossings, which have traffic lights but no striped markings on the road. Stewart says that pelican crossings should also have road markings to help drivers judge the size of a pedestrian.

In correspondence with Stewart, the Department of Transport describes the research as "interesting", though it does not accept that the paper "demonstrates that perceptual error in the way described is the main reason for children having a much higher accident rate". The DoT does agree, however, that marking the road with stripes at pelican crossings could improve things. Unfortunately, says Stewart, there is no indication that the positive tone of some of the DoT's comments has led to "action to curb child pedestrian accidents or to promote further research".

Questions 1-5

Do the following statements agree with the writer of Deadly Illusion Brings Death on the Road? Please write

YES	*if the statement agrees with the writer;*
NO	*if the statement does not agree with the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

> *Example:* Answer:
> Scientists are studying traffic accidents involving children. *YES*

1. Optic flow refers to the moving speed of an object approaching someone.
2. Stewart and his colleagues hope that drivers will be required by law to drive at a lower speed in town.
3. Lorries are less likely to hit children because lorry drivers sit higher up than car drivers.
4. Stewart believes that pelican crossings should be replaced by zebra crossings.
5. Stewart appreciates what the Department of Transport has done to reduce the number of child pedestrians hit by cars.

Questions 6-14

Complete the gaps in the following summary by using NO MORE THAN THREE WORDS taken from the passage Deadly Illusion Brings Death on the Road.

British researchers have evidence to believe that the number of children __6__ by cars while crossing roads is related to drivers' inability to judge how far they are from young pedestrians. Stewart of the University of Aberdeen believes that drivers __7__ assume that pedestrians crossing roads are adults and when it is __8__ crossing the road, they tend to think that the child is __9__ than he really is. Because of this misperception of distance, drivers are not able to stop their cars in time to prevent a __10__.

Britain's child __11__ are worse than those in many other European countries. This, according to Stewart, is because many crossings in Britain do not have __12__ that help drivers to tell if the __13__ in front is a child or an adult. In Britain, __14__ have lights but there are no markings on the road. Stewart thinks that markings should be painted.

Exercise 7

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 20 minutes.

How Safe Are Air Bags?

Statistics have begun to accumulate on the side effects of air bags. A recent University of North Carolina (UNC) study reported that 60 per cent of driver's-side air bag deployments have resulted in injuries from the air bag. A report by the Insurance Institute for Highway Safety (IIHS) indicated that air bags caused injuries in 23 per cent of 1,200 crashes in which the bags were deployed. The National Highway Traffic Safety Administration (NHTSA) estimates that 25,000 people were injured by air bags in 66,000 deployments between 1988 and 1991, an injury rate of 38 per cent.

No matter whose statistics are most accurate, the devices clearly are not feather pillows. To prevent the occupant from hitting the car's interior, they must inflate quickly, in about a twentieth of a second. When the air bag deploys, it contacts the occupant's head, face, chest, and arms. In a study done by IIHS, 96 per cent of the injuries attributed to air bags weren't life-threatening, but were concussions, cuts, sprains, broken bones, and lacerations. 6 per cent involved the occupant's eyes; 3 people required eye surgery. That's because air bags inflate faster than the eye can blink. The other injuries recorded by IIHS were viewed as moderate threats to life and were probably less severe than injuries that would have occurred without an air bag.

Those who have been protected by air bags are impressed by them. In the UNC study, 96 per cent of drivers who had been in an accident in a car with an air bag said they wanted one in their next car.

Yet, NHTSA has reported a handful of moderate crashes in which occupants apparently were killed by air bags. In most cases, the driver was too close to the steering wheel or the passenger was unbelted when the bag deployed.

A car's structural design greatly effects the way the air bag must be deployed. GM, for example, uses a soft front structure and progressive deformation of the car body to delay and reduce the energy pulse reaching the occupants. This strategy allows sensors to detect the collision early and inflate the air bags relatively slowly. Aggressive inflation increases the chances of an air bag injury, explained Mitchell Scherba, director of crash performance at GM. "We put more engineering into sensing the accident so we can use less aggressive inflators," he said.

Until the mid-1970s, safety engineers at Mercedes-Benz also used a soft structure to absorb head-on impacts. But Mercedes discovered that 75 per cent of collisions classified as head-on crashes actually involved only a partial overlap between the vehicles. In the early 1980s, they began designing their cars with rigid front structures to prevent intrusion into the passenger compartment in these offset frontal crashes.

Unfortunately, the rigid structure quickly transmits the crash pulse to the passenger compartment, making aggressive air bag inflation necessary. In a 1992 NHTSA study, the peak speed of a deploying Mercedes air bag was 167 mph versus 98 mph and 112 mph for two GM air bags. Mercedes acknowledges the increased risk of air bag injuries from rapid inflation, but claims its concerns for offset crash protection are of greater importance. "We will never be the best in full frontal tests because they poorly represent the real world," said Tom Bologa, manager of safety engineering for Mercedes-Benz North America. "We will not give up our position as promoters of offset crash testing." Most other manufacturers fall between Mercedes and GM in front stiffness and air bag speeds. And GM has lately begun building stiffer structures.

How can you reduce your chances of an air bag injury? First and foremost, wear your seat-belt. GM calculates that belts are 42 per cent effective at preventing fatalities; air bags alone are only 21 per cent effective. Used together, belts and air bags are 47 per cent effective. Seat-belts also lessen the chance of violent contact with the deploying air bag.

Experts from General Motors, Chrysler, Ford, and Mercedes all advise giving an air bag room to inflate. Front-seat passengers should move the seat as far back as they can while keeping the seat-belt low, over the strongest part of the pelvis.

On the driver's side, less space is available between the driver and the air bag housed in the steering wheel. Mercedes-Benz's Bologa recommends you try to sit at least eight to twelve inches from the wheel. For people with short arms, this can be a problem. "Smaller, shorter people are at higher risk than larger people," agreed GM spokesman Dick Thompson. GM researcher Scherba offered: "I tell my wife, make sure the seat-belt is tight, and sit as far back as you can and still comfortably control the car."

Questions 1-6

Do the following statements agree with the writer of the above passage? Please write

TRUE	*if the statement agrees with the writer;*
FALSE	*if the statement does not agree with the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example:	Answer:
Experts advise sitting as far back from the dashboard as you comfortably can.	*TRUE*

1. Experts are in close agreement concerning the rate of injury from air bag deployment.
2. In 96% of deployments, air bags caused serious injuries.
3. The eye requires more than 0.05 seconds to blink.
4. More than 19 out of 20 people who've been in an accident where an air bag is deployed are satisfied.
5. The number of accidents in which people have seemingly been killed by air bags is extremely small.
6. We can infer that Mercedes air bags inflate faster than those of any other car-maker.

Questions 7-13

Below are some words and phrases, some of which are taken from the reading passage How Safe Are Air Bags? Decide which word or phrase should go in each gap. Note that there are more words and phrases than gaps.

A. room
B. side effects
C. inflation
D. blink
E. 60 per cent
F. crash testing
G. twentieth
H. life-threatening
I. less space
J. offset crash
K. violent contact
L. less aggressive inflators

Studies done by several organizations have begun to show the side effects of air bags. A large number of injuries resulted from the too quick ____7____ of the air bags. An air bag usually has to inflate in about a ____8____ of a second, yet it takes the eye a little longer to ____9____. However, some people believe that these injuries were not ____10____, compared to ____11____, without an air bag. To reduce the risk of air bag injuries, many car producers began to adopt ____12____, and drivers are also advised to wear seat-belts and to leave enough ____13____ for an air bag to inflate.

Exercise 8

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Expanding Consciousness

A brain-damaged patient suffering from prosopagnosia cannot recognize familiar faces although her vision is otherwise intact. She has awareness without recognition. A patient with blindsight is blind in parts of his visual field, but if asked to guess the location of objects in those "blind" spots, he is more than likely to guess right. He has recognition without awareness. Are both these patients conscious?

How the brain produces consciousness is a question that has puzzled philosophers and scientists for millennia, and many of them have looked to brain-damaged patients for the answer. Consider a patient with Parkinson's disease who wants to move his legs but cannot. His thoughts have become severed from his actions, and that dissociation seems to be related to the lack of a certain chemical, dopamine, in one area of his brain. But why dopamine should perform that particular function in that particular area nobody knows.

What studies of brain damage reveal is that consciousness has many facets. But it can be a dangerous approach because it rests on the assumption that each part of the brain that contributes to consciousness does so consistently over time. Yet, if consciousness is dynamic rather than static, if the conscious functions performed by a certain body of neurons in the brain are transient, then the functions lost when a brain receives a blow at a specific point in time could differ from those that might have been lost a moment later.

In the past, scientists have searched for discrete switches at the neuronal level — singular, all-or-nothing events which when put together give rise to a global sensibility. But how and where the translation from physical to mental takes place remains a mystery, not least because those on/off neuronal mechanisms seem so incompatible with the diffuse and indefinable property of consciousness.

In *Journey to the Centers of the Mind,* neuroscientist Susan Greenfield suggests that the underlying physical processes are no less complex and diffuse than consciousness itself. Consciousness is not located in one region of the brain, one neuron or one molecule, and it does not necessarily go hand in hand with stimulation of the senses. But each conscious experience is singular in time. She describes shades of subtlety in the activities of neurons: they can be biased to respond in certain ways and in the sense that their behaviour is shaped by past experience; they even have memory. The action potential, the firing of a cell in response to stimulation, might be an all-or-nothing event, but the threshold at which a neuron produces an electrical signal can be lowered or raised incrementally.

By the same token, consciousness is better viewed as a continuum rather than as an all-or-nothing phenomenon. Greenfield suggests that it is the product of large interacting groups of neurons which form and reform rapidly around a triggering stimulus like concentric ripples on the surface of a pond. And the size of each neuronal assembly or "gestalt" is determined by the brain's level of arousal at a particular moment in time. Arousal is, in turn, controlled by chemicals called amines (neuromodulators) that are produced in the most primitive part of the brain. According to Greenfield's theory, fountains of these neuromodulators diffuse upwards and outwards from neurons in the brainstem, and it is these chemicals which bias the firing threshold of neurons in the rest of the brain — even in the sophisticated outer cortex. By so doing, they dictate the number of neurons that will be incorporated in each gestalt, and so determine the depth of the emerging consciousness. In this way, each conscious experience is qualitatively unique.

The idea of neuronal assemblies is not new. But the concept of consciousness as something that shrinks and expands, growing in depth as the brain grows physically, is a new departure. Very young children have no sense of other people's thought processes — their consciousness is egocentric. But by the age of about four they have begun to project mental states onto others. And brain-damaged patients, whose brains have effectively been reduced in size, have something in common with children. Both function at a shallower level of consciousness because stimuli trigger relatively small gestalts in their brains.

Greenfield does not pretend to have uncovered the secret of consciousness. Her theory cannot answer all the questions, but it may have brought us a small step closer to a physical explanation of what it is to be human.

Questions 1-7

Complete the gaps in the following summary by using NO MORE THAN THREE WORDS taken from the passage Expanding Consciousness.

Consciousness is a state of mind that has interested philosophers and scientists for thousands of years. However, our understanding of it has remained fairly basic. For example, scientists do not know whether the __1__ of a prosopagnosia patient means the same as consciousness and whether dopamine in the brain is linked with dissociation of the thoughts and actions of someone with __2__ disease.

Susan Greenfield's theory has added a new dimension to our understanding of consciousness. She feels that consciousness and stimulation of the senses are not attached to each other and the responses of __3__, which are closely related to a global sensitivity of the body, have patterns which may have been conditioned by __4__. Consciousness is not a yes-or-no state of mental and physical condition; it is a __5__ that has a range. Within this range, there is a chain of interactions between the quantity of amines and __6__, between gestalt and the depth of consciousness. These interactions ultimately __7__ the level of consciousness.

Questions 8-14

Do the following statements agree with the writer of Expanding Consciousness? Please write

YES	*if the statement agrees with the writer;*
NO	*if the statement does not agree with the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example:	Answer:
A patient of Parkinson's disease has problems controlling his action.	*YES*

8. Consciousness is a state of mind that has multi-fold dimensions.
9. A man is either conscious or unconscious of what is happening around him.
10. Patients with blindsight have visions that normal people are not able to see.
11. Excessive amount of dopamine in the brain may be one of the reasons that cause Parkinson's disease.
12. Arousal level is controlled by the quantity of amines.
13. Cases of blindsight and prosopagnosia disease support Greenfield's theory.
14. The depth of consciousness in very young children is comparable to that in brain-damaged patients.

Exercise 9

In this exercise, you will read a passage and answer the questions that accompany the passage. Some of the questions come before the passage; others come after the passage. The suggested time for reading the passage and answering the questions is 15 minutes.

Questions 1-8

Choose the most suitable headings for paragraphs B-I from the list of headings below. Write the appropriate numbers (i-xi) in the spaces provided.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i) Passage from an island to the continent
(ii) Inaccurate forecast and unexpected amount of pollen
(iii) An unexpected loss of control of the virus
(iv) Devastating damages to the local plants and animals
(v) Different approaches to get rid of the unwanted
(vi) Be cautious before you add something to the environment
(vii) Rabbits and their habitat
(viii) A shift of efforts
(ix) Possible spreading routes
(x) A killing virus and its desirable potentials
(xi) The success of a similar effort half a century ago

Example:	Answer:
Paragraph A	*iii*

1. Paragraph B ____________
2. Paragraph C ____________
3. Paragraph D ____________
4. Paragraph E ____________
5. Paragraph F ____________
6. Paragraph G ____________
7. Paragraph H ____________
8. Paragraph I ____________

A Hare-brained Scheme

A Despite many efforts to control them, rabbits have overrun Australia and are causing blight, erosion and extinction wherever they go. On an island off the Australian coast, scientists had been testing a deadly rabbit virus to see whether it could serve as a weapon against the long-eared pests. The virus escaped from the island and is now spreading, uncontrolled, through the Australian outback. The unplanned viral outbreak — together with another experiment involving pollen — raises concerns about the ability of scientists to control the spread of organisms that they introduce into the environment.

B The offending bug causes rabbit calicivirus disease (RCD). First identified in China in 1984, the virus surfaced in Europe in 1986. The only animals affected by the virus are European rabbits, *Oryctolagus cuniculus*, which usually die within two days of contracting the disease. Australians and New Zealanders soon noticed RCD's potential as an anti-rabbit agent, and the Australia and New Zealand Rabbit Calicivirus Disease Program was born. Funded by the Commonwealth Science and Industry Research Organization (CSIRO), among other agencies, the programme set up a test site at Wardang Island off the coast of South Australia to evaluate the disease for an eventual release, probably in 1997.

C Officials foresaw little possibility of the virus's escaping from the island, but escape it did. In October, CSIRO announced that RCD had spread beyond the quarantine area despite "strict surveillance" and "comprehensive microsecurity measures". Within a week a rabbit had died of RCD at Point Pearce on Yorke Peninsula near the island. Scientists speculate that bush flies may have transmitted the virus to the mainland.

D A frantic attempt to contain the virus followed. Scientists were stunned when the virus appeared at Yunta, 260 kilometres from Point Pearce, and then at Blinman, another 200 kilometres away. Officials suspect that humans may have been responsible for the disease's spread. A reporter for the *Sydney Morning Herald* may have unintentionally carried the virus from Point Pearce to Yunta; farmers, whose animosity toward rabbits runs deep, may also be helping the virus along, possibly by releasing infected animals.

E By the end of October, officials gave up trying to control the spread of RCD and instead concentrated on measuring the disease's effect. The virus spread rapidly, reaching Broken Hill in New South Wales by early December. "In broad terms, where the virus has been present for four to five weeks, there is over a 95 per cent kill rate," said Niall Byrne of CSIRO. This is enough to reduce the population, despite rabbits' legendary fecundity.

F Rough estimates put the current rabbit population at 200 to 300 million. At these numbers, they can devastate the flora of the countryside and drive other plant-eaters into starvation. "The scale of rabbit damage is just vast," Byrne says. "Twenty-five per cent of native mammals in New South Wales have been rendered locally extinct, and the major factor is rabbits."

G RCD is not the first anti-rabbit virus released in Australia. In 1950, myxomatosis was introduced, and the initial success was astounding. A premyxomatosis rabbit population of about 600 million crashed to about 50 million. But the virus failed to control the rabbit population for long, because a co-evolution between the virus and rabbits followed. According to Edward M. Berger, a biologist at Dartmouth College, "a less virulent strain of virus evolved, and the [rabbit] survivors became more resistant," enabling both the virus and the host to survive.

H RCD is not the only organism that is difficult to control. A recent Scottish study shows that a previously used pollen dispersion model — which would probably have been used to predict how fast genes from a transgenic crop leak into the environment — badly underestimated the amount of pollen that spreads from large oilseed rape fields.

I The study's authors discovered that pollen can disperse much farther than the model predicts; pollen levels that had been expected no more than 100 metres away were observed at distances up to 2.5 kilometres. The study thus demonstrates the principle that any genes that scientists introduce into a crop can quickly spread into wild populations. A herbicide-resistant strain might cause "superweeds" that would be difficult to contain. This incident, like the one in Australia, should serve as a warning: it is easy to release an organism into a new environment but hard to control its spread.

Questions 9-13

Do the following statements agree with the writer of the passage? Please write

YES	*if the statement agrees with the writer;*
NO	*if the statement does not agree with the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example:	Answer:
Scientists have been trying to control the population of rabbits.	*YES*

9. RCD killed many rabbits in China.
10. Sabotage might have been a reason for the spread of the virus.
11. Rabbits pose a greater environmental hazard in New South Wales than in other states.
12. A killing virus will experience a new phase of evolution when it has killed all that it can kill.
13. Scientists had thought that pollen would spread further than it actually did.

Question 14

14. Which of the following places is the farthest from the site of experiment?
   - A. Wardang Island
   - B. Point Pearce
   - C. Yorke Peninsula
   - D. Yunta
   - E. Blinman

Exercise 10

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Hypnosis

There are many methods of producing hypnosis; indeed, almost every experienced hypnotist employs variations differing slightly from those of others. Perhaps the most common method is something along these lines. The hypnotist tries to obtain his subject's cooperation by pointing out to him the advantages to be secured by the hypnosis, such as, for instance, the help in curing a nervous illness to be derived from the patient's remembering in the trance certain events which otherwise are inaccessible to his memory. The patient is reassured about any possible dangers he might suspect to be present in hypnosis, and he may also be told (quite truthfully) that it is not a sign of instability or weakness to be capable of being put in a hypnotic trance, but that, quite on the contrary, a certain amount of intelligence and concentration on the part of the subject is absolutely essential.

Next, the subject is asked to lie down on a couch, or sit in an easy-chair. External stimulation is reduced to a minimum by drawing the curtains and excluding, as far as possible, all disruptive noises. It is sometimes helpful to concentrate the subject's attention on some small bright object dangled just above eye-level, thus forcing him to look slightly upwards. This leads quickly to a fatigue of the eye-muscles, and thus facilitates his acceptance of the suggestion that he is feeling tired and that his eyes are closing. The hypnotist now begins to talk to the subject in a soft tone of voice, repeating endlessly suggestions to the effect that the subject is feeling drowsy, getting tired, that his eyes are closing, that he is falling into a deep sleep, that he cannot hear anything except the hypnotist's voice, and so on and so forth. In a susceptible subject, a light trance is, thus, induced after a few minutes, and the hypnotist now begins to deepen this trance and to test the reactions of the subject by giving suggestions which are more and more difficult of execution. Thus, he will ask the subject to clasp his hands together, and tell him that it is impossible for him to separate his hands again. The subject, try as he may, finds, to his astonishment, that he cannot in actual fact pull his hands apart. Successful suggestions of this kind are instrumental in deepening the hypnotic trance until, finally, in particularly good subjects, all the phenomena which will be discussed presently can be elicited. Having induced a reasonable deep hypnotic trance in our subject, what types of phenomena can be elicited? The first and most obvious one, which, indeed, may be responsible in large measure for all the others, is a tremendous increase in the subjects's suggestibility. He will take up any suggestion the hypnotist puts forward and act on it to the best of his ability. Suggest to him that he is a dog, and he will go down on all fours and rush around the room barking and yelping. Suggest to him that he is Hitler, and he will throw his arms about and produce an impassioned harangue in an imitation of the raucous tones of the Fuhrer! This tremendous increase in suggestibility is often exploited on the stage to induce people to do foolish and ridiculous acts. Such practices are not to be encouraged because they go counter to the ideal of human dignity and are not the kind of way in which hypnosis ought to be used; nevertheless, they must be mentioned because they are probably phenomena such as these which are most familiar to people from vaudeville acts, from reading the papers, and so forth.

It would not be true to say, however, that all suggestions are accepted, even in the very deepest trance. This is particularly true when a suggestion is made which is contrary to the ethical and moral conceptions held by the subject. A well-known story may be quoted to illustrate this. Charcot, the great French neurologist, whose classes at one time were attended by Freud, was lecturing on hypnosis and was demonstrating the phenomena of the hypnotic trance on a young girl of eighteen. When she had been hypnotized deeply he was called away, and handed over the demonstration to one of his assistants. This young man, lacking the seriousness of purpose so desirable in students of medicine, even French ones, suggested to the young lady that she should remove her clothes. She immediately awakened from her trance, slapped his face, and flounced out of the room, very much to his discomfiture.

Glossary

hypnosis:	a sleep-like state in which a person's mind and actions can be controlled by the person who produces it
trance:	a sleep-like condition of the mind in which one does not notice the things around him

Questions 1-7

The following are the different stages in a hypnotic process. Please number them in the proper order of the stages in a hypnotic process. Some have already been done for you.

1. The hypnotist begins to deepen the trance by giving suggestions more difficult of execution. ______

2. The patient is explained that being able to be put in a hypnotic trance is not a sign of weakness in his personal character. ______

   The patient is asked to lie down or sit in an easy-chair. __3__

3. The patient is told of the advantages of undergoing a hypnotic diagnosis. ______

4. The patient is put into a deep trance. ______

5. The curtains are drawn and the noises are excluded. ______

   A light trance is induced after a few minutes. __7__

6. The hypnotist talks to the patient in a soft tone of voice. ______

7. The patient's attention is concentrated on some small bright object. ______

Questions 8-12

The following are examples of what a hypnotist would probably do at some of the stages in a hypnotic process presented in questions 1-7. Please indicate of which stage each of the following is an example by putting a number in the space provided. Please note that your answering the previous questions correctly is very essential to attempting the following questions.

Example:

The hypnotist says to the patient that his eyes are tired and that he is going to fall into sleep.

Answer:
Stage __6__

8. The hypnotist asks the patient to relax his muscles and lie comfortably. Stage ______

9. The hypnotist says to a patient that remembering in the trance state certain events is helpful in curing his nervous illness. Stage ______

10. The hypnotist asks the patient to clasp his hands and tells him that it is impossible for him to separate his hands. Stage ______

11. The hypnotist asks the patient to recall his memories of certain events. Stage ______

12. The hypnotist asks the patient to look slightly upwards at a light. Stage ______

Exercise 11

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 20 minutes.

Technique of Difficult Intramedullary Nail Removal Utilizing the Midas Rex

1 The increasing popularity of the use of metallic implants in the field of orthopaedics has resulted in later operations of their subsequent removal. Most authors now believe that hardware used in the fixation of fractures should be retrieved, especially in the younger patients. It is generally accepted that hardware used to fix long bone fractures should be removed after approximately 18 to 24 months. Fractures of other bones can usually have hardware removed after six months to one year. Many of us have all too frequently heard "it is just a simple hardware removal" at a preoperative conference. Often the task is left to the more junior residents and an easy hardware removal turns into a several hour flail. Unfortunately, at our institution, we are often removing implants that have been inserted elsewhere. A relatively simple, safe method of intramedullary nail extraction utilizing the Midas Rex is presented for those instances in which the routine extraction method fails. This method is especially useful for those cases in which the eye or threads have been altered in some manner that prevents use of normal extraction instruments. It can also be used in those rare instances where the extraction instrumentation is not available for one reason or another. A case report will illustrate the procedure.

CASE REPORT

2 M. R. is a 45-year-old white male who was involved in a motorcycle accident in 1978. He sustained, among other injuries, fractures on the left femur, left tibia, and left ankle. Treatment at the original hospital included use of a Schneider rod for the femur fracture and a subsequent ankle fusion. The patient had chronic left ankle pain after the original accident, and a subsequent injury resulted in a left BKA in 1982.

3 The patient presented to our institution complaining of recurrent episodes of pain, swelling and draining from the rod implant site. The patient underwent an unsuccessful attempt at removal in December 1981. It was noted at the time of surgery that the Schneider rod had been altered at the time of original insertion. The threaded proximal portion of the nail had been cut with a saw. The normal extraction couple would not fit and was, therefore, useless. The surgeon at that time utilized several different devices, even resorting to vice grips and mallet, without success. Following this attempt, the patient was placed on tetracycline, and the drainage resolved as long as he took the medication. However, the pain persisted.

4 The patient presented to our clinic desiring removal of the rod, complaining of chronic pain, with only moderate relief by narcotics. He had visited another large medical centre in the interim and was told that they would not even attempt an extraction because of the previous failure. Examination revealed tenderness to palpation over the left greater trochanter and a large mass. The prior incision was healed but found to be warm to touch. The surrounding area was characterized by chronic skin and very dark pigmentation changes; however, the wound was not actively draining. The patient's sedimentation rate was slightly elevated at 22. It was decided that another attempt at extraction was warranted, and the patient consented.

5 OPERATIVE APPROACH: Prior to the scheduled date of operation, a carbide dissecting tool was ordered and received. Utilizing the original skin incision, the standard approach was made. Once through the skin and subcutaneous tissues, a large volume of chronic granulation tissue almost amyloid-like in nature was expressed from the wound. No gross pus was noted, but the end of the rod appeared to have "chewed up" the surrounding soft tissues. The absent threads of the rod were visualized and appeared to have been cut with a hacksaw. Using the Midas Rex B-1 dissecting tool, a unicortical kerf 5 cm long was made in the greater trochanter down to the rod from the exposed portion of the rod laterally. This was done to relieve tension on the rod, which would ease removal. The carbide dissecting tool was then used to fashion an oval-shaped hole through the substance of the rod. Dissecting the hole through the rod took less than five minutes and was accomplished gradually. The heat of the metal on metal dissection was easily dissipated with frequent application of cool saline to the surfaces. Once the hole was dissected, the Kuntscher extraction device was seated in the newly formed hole, and the rod removed in about five minutes with gentle misleading. Total surgical time for the procedure was approximately 30 minutes.

6 The wound was vigorously irrigated out to remove all metallic fragments and closed in the standard fashion. The patient was discharged the following day and kept on crutches without his prosthesis for approximately two weeks. The patient was seen in follow-up with the wound well healed and resolution of the pain.

7 The above case illustrates a relatively simple method of nail removal utilizing the Midas Rex. The availability of the carbide tool is the key. Several modifications can be easily made depending upon the extraction device available. Just as an oval-shaped hole was drilled with the carbide dissecting tool, it could have easily made a slot or circular hole. This method is only limited by the ingenuity of the operating surgeon. The increasing variety of implants and their use will lead to subsequent operations for removal. If the implant has been altered or if proper extraction instrumentation is not available, the Midas Rex with the proper carbide dissecting tool provides another avenue for successful retrieval.

Glossary

carbide: calcium carbide
incision: cut
intramedullary: inside the bone
kerf: a small opening made by a cutting tool
orthopaedics: branch of medicine dealing with bones

Questions 1-5

Answer the following questions.

1. What are the metallic implants used for?
2. When should the metallic implants be removed?
3. Why is it sometimes difficult or even impossible to remove nail implants?
4. What is "the medication" mentioned in Paragraph 3?
5. For the patient M. R., when was the Schneider rod inserted?

Questions 6-10

The following statements are what happened to M. R.. Please arrange them in chronological order.

6. _____ 7. _____ 8. _____ 9. _____ 10. _____

A. A Schneider rod was inserted.
B. Visited another hospital but was refused removal of the rod.
C. Injured in a motorcycle accident.
D. Had the rod removed.
E. Underwent an unsuccessful operation to remove the metallic implant.

Questions 11-17

11-17 are what happened during the operation to remove a metallic implant from M. R.'s body. Please indicate the proper order of these steps by numbering them 1 through 7 in the spaces provided.

11. A large volume of chronic granulation tissue was expressed. ______
12. An oval-shaped hole was made using the carbide dissection tool. ______
13. The wound was closed. ______
14. Metallic fragments were removed. ______
15. An incision was made using the standard approach. ______
16. A kerf was made using the Midas Rex B-1 tool. ______
17. The rod was removed. ______

Question 18

What is most important in an operation like the one described in detail in the passage? (Answer in no more than five words.)

____

Exercise 12

In this exercise, you will read a passage and then answer the questions that follow. The suggested time for reading the passage and answering the questions is 15 minutes.

Metal Compounds Which Break the Rules

In the quest for more efficient catalysts, a group of British chemists has uncovered a series of metal compounds with structures that are upsetting conventional theories of chemical bonding. Metal compounds that function as catalysts usually do so in an unusually low oxidation state, in which fewer than the usual number of electrons has been lost. Making such states stable is something of an art.

One way of stabilizing metals in low oxidation states is to form a compound, known as a complex, with phosphine-phosphorus compounds with three organic groups attached. Phosphines stabilize a low oxidation state because, as they bond to a metal, they pump electrons back to the metal atom by forming a "back-bond" to the metal.

Noel McAuliffe, Stephan Godfrey and Tony Mackie of the University of Manchester Institute of Science and Technology have discovered a way of making phosphine complexes directly from metal powders using the reagents phosphine-bromine or phosphine-iodine (*Angewandte Chemie*, International Edition, p. 919; *Journal of the Chemical Society, Chemical Communications*, 1992, p. 484 and p. 945). When they examined one of their reagents, triphenylphosphine-bromine, they discovered that it had a structure which defies conventional theories of bonding (*Journal of the Chemical Society, Chemical Communications*, 1992, p. 356).

Usually, chemists make metal phosphines by reacting metal bromides and iodides with phosphines. But McAuliffe and his colleagues have discovered that a better way is to react the phosphine first with bromine or iodine, then with the metal itself. The first step forms compounds such as triphenylphosphine-bromine, $(C_6H_5)_3\ PBr_2$, and trimethylphosphine-iodine, $(C_3H_3)PI_2$. These were assumed to be ionic compounds, in keeping with conventional theory, an idea supported by their behaviour in solution, which is that of an electrically conducting material, for example, $[(C_6H_5)_3\ PBr]^+$ and Br^-.

However, when Robin Pritchard, a crystallographer at UMIST, analysed the colourless crystals of $(C_6H_5)_3\ PBr_2$ with X-rays he discovered that it was the first ever neutral molecule in which phosphorus forms four covalent bonds and bromine forms two bonds. The iodine compound, $(C_6H_5)_3\ PI_2$, has the same chemical structure. Such structures defy the known laws of chemistry, which in a neutral molecule require both the bromine atoms or iodine atoms to be directly bonded to the phosphorus atom at the centre.

It is with compounds such as these that McAuliffe has been making unusual compounds. Zinc power reacts with triethylphosphine-iodine dissolved in ether to give a 100 per cent yield of a 1:1 zinc complex, the first ever zinc phosphine whose structure has been determined. Previous attempts to make such a compound exclude moisture and air, while the new reaction goes easily and smoothly.

Similarly, nickel formed a complex, $NiI_3[(CH_3)_3P]_2$, with oxidation state III, and cobalt produces a complex with a unique pattern of five bonds to the central cobalt atom. Not only that, but a reaction between cobalt powder and tributylphosphine-iodine yielded crystals not of the expected product but of what the authors call a "frozen transition state". In these crystals, the reaction has been stopped at its halfway stage. X-ray analysis showed that they had frozen the phosphine-iodide reagent in the act of attacking the cobalt atom. One phosphine-iodine molecule had surrendered its iodine atoms to cobalt with backup from another, while a third phosphine-iodine molecule attacked the cobalt from the other side.

In a reaction with manganese powder, the product consisted of two complexed manganese atoms linked together through iodine atoms. While such bridged complexes are quite common, this particular one has one of the manganese atoms in oxidation state II and the other is in oxidation state III.

Questions 1-4

The following are stages taking place in the usual way of stabilizing metals in low oxidation states. Put them in correct order.

A. Phosphines are attached with three organic groups.
B. Phosphines bond to a metal.
C. Phosphines pump electrons back to the metal atom.
D. Phosphines form a back bond to the metal.

1. Stage 1: _____ 2. Stage 2: _____ 3. Stage 3: _____ 4. Stage 4: _____

Questions 5-7

Below are stages that occur in the usual way and the new way of making metal phosphines. Write U if it is the usual way and N if it is the new way.

______ 5. After reacting with bromine or iodine, the phosphine reacts with the metal itself.

______ 6. Phosphines react with metal bromines and iodines.

______ 7. Moisture and air are excluded.

Unit Eight

Practice Tests

Sáu đề thi mô phỏng trong sách này về độ dài, mức khó, đề tài và dạng đề đều rất gần gũi với đề thi IELTS thực tế để người đọc luyện tập, hiểu được mức khó của kỳ thi và đánh giá trình độ của mình.

Vậy khi làm bài thi thử hoặc thực sự tham dự kỳ thi IELTS phải chú ý những vấn đề gì?

Khi nhận được đề thi, việc phải làm trước tiên là xem sau mỗi bài đọc có glossary hay không. Nếu có, phải làm rõ ý nghĩa của những từ này. Người ra đề cho rằng, nếu trong bài còn có những từ mới khác, về cơ bản sẽ không ảnh hưởng đến việc hiểu bài đọc. Do đó, trước khi đọc nội dung chính, phải làm sáng tỏ ý nghĩa của những từ này.

Tiếp theo đó, thí sinh nên xem lướt qua toàn bộ đề thi, xem trong bài có hình, biểu đồ hay không. Nếu có, phải xem qua nội dung khái quát của hình (hoặc biểu đồ) trước. Thông thường, trong bài đọc có hình, thì hình này rất có thể được dùng để ra đề. Khi đọc, chúng ta thường chú ý đến textual information "giấy trắng mực đen", còn đối với các graphic information như hình, biểu đồ, trong quá trình đọc theo bản năng chúng ta sẽ bỏ qua, đối với các thông tin bao gồm trong hình, biểu đồ thì "nhìn mà không thấy", khi giải đề sẽ không tìm được đáp án trong nội dung chính. Thật ra, các câu hỏi xuất phát từ hình, biểu đồ dễ hơn rất nhiều. Vì vậy, phải xem lướt toàn bộ đề thi, xem có hình, biểu đồ hay không.

Sau khi xem glossary và toàn bộ đề thi, phải nhanh chóng quyết định làm bài nào trước trong ba bài đọc.

Xét về chủ đề, ba bài đọc mỗi bài bao quát một phương diện: khoa học công nghệ (vật lý, cơ giới, lực học v.v.); khoa học đời sống (y học, động vật, thực vật v.v.); khoa học nhân văn (xã hội, giáo dục, tâm lý v.v.). Độ dài của mỗi bài đọc là 800 đến 1.000 từ. Dạng đề có trùng lặp. Ba bài đọc đều được chọn từ các sách báo, tạp chí nguyên bản. Mức khó, độ dài v.v. không có sự chênh lệch quá lớn. Có người cho rằng mức khó của ba bài đọc tăng dần, cũng có người cho rằng giảm dần. Thật ra, nhân tố cơ bản ảnh hưởng đến độ khó của bài đọc nằm ở chủ đề của bài đọc. Tục ngữ có câu: "khác nghề như cách núi". Thí sinh học kinh tế khi đọc một bài đọc có liên quan đến nọc rắn tất nhiên sẽ rất khó khăn. Vì vậy, sau khi cầm đề thi, việc thứ ba phải làm chính là quyết định đọc bài đọc nào trước. Phần lớn thí sinh làm tất cả các câu với mức độ kỹ lưỡng giống nhau đều không đủ thời gian. Do vậy, cần lựa chọn bài đọc mà mình có ưu thế để làm, làm bài đọc khó nhất, có chuyên môn lạ nhất (thường là các bài đọc có liên quan đến khoa học đời sống) sau cùng. Trong kỳ thi thường xuất hiện tình huống như sau, những bài đọc có đề tài phổ biến, quen thuộc với đời sống có độ khó không lớn, nhưng độ khó của các câu hỏi thì khá lớn; còn các bài đọc có tính chuyên môn cao thì mức khó của các câu hỏi không lớn. Bất kể làm bài theo thứ tự nào, đều phải phân phối thời gian hợp lý, không nên mất quá nhiều thời gian ở một phần hoặc một câu khó nào đó để đảm bảo số lượng các câu trả lời.

Trong kỳ thi IELTS, các câu hỏi trong mỗi bài đọc thường được sắp xếp theo thứ tự tự nhiên (ngoại trừ đề phân loại phối hợp), có thể đọc theo thứ tự tự nhiên để tìm đáp án. Nhưng mỗi khi hoàn thành một nhóm câu hỏi, cần phải đọc lại bài đọc từ đầu để hoàn thành nhóm câu hỏi khác.

Tiếp theo, khi luyện tập và thực sự tham dự kỳ thi phải chú ý các việc sau đây:

1. Khi làm bài thi phải sử dụng bút chì, không được sử dụng bút máy và bút xóa.

2. Trong quá trình đọc có thể đánh dấu trên đề thi, phải đánh dấu những thông tin then chốt.

3. Khi làm bài thi phải viết trực tiếp đáp án theo từng câu hỏi lên giấy thi, bởi vì môn thi đọc không dành riêng thời gian để viết đáp án.

4. Trong kỳ thi IELTS các câu sai không bị trừ điểm, nếu không xác định được đáp án hoặc sắp hết giờ thi thí sinh có thể đoán đáp án, không nên để lại các khoảng trống trên giấy thi.

5. Trong khi thi giám thị không trả lời bất cứ câu hỏi nào của thí sinh.

6. Giữa giờ thi có thể giám thị chỉ thông báo giờ một lần, nên nắm chắc thời gian làm bài.

7. Các dạng đề thi như tóm tắt (Summary), hoàn thành câu (Sentence Completion) v.v. yêu cầu rất nghiêm khắc về ngữ pháp, còn các dạng đề thi như trả lời ngắn (Short-answer Questions), điền vào bảng (Table Completion) v.v. thì không yêu cầu nghiêm khắc về ngữ pháp.

* Cách tự tính điểm thi (loại Học thuật)

Số đáp án chính xác	Số điểm
1	1
2-3	2
4-9	3
10-15	4
16-22	5
23-28	6
29-35	7
36-39	8
40	9

INTERNATIONAL ENGLISH LANGUAGE TESTING SYSTEM

PRACTICE TEST (Version One)

ACADEMIC READING

TIME ALLOWED: 1 HOUR
NUMBER OF QUESTIONS: 39

Instructions

ALL ANSWERS MUST BE WRITTEN ON THE ANSWER SHEET.

The test is divided as follows:

Reading Passage 1	Questions 1-16
Reading Passage 2	Questions 17-26
Reading Passage 3	Questions 27-39

Start at the beginning of the test and work through it. You should answer all the questions. If you cannot do a particular question, leave it and go on to the next. You can return to it later.

Reading Passage 1:

(You should spend about 20 minutes on Questions 1-16 which are based on Reading Passage 1.)

Questions 1-7

Reading Passage 1 has eight paragraphs A-H. Choose the most suitable headings for Paragraphs B-H from the list of headings below. Write the appropriate numbers (i-xii) in boxes 1-7 on your answer sheet.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i) Where the harmful particles come from
(ii) The problems of fire ironed out
(iii) Carbonex is ideal for factories
(iv) Carbonex works with more than one fossil fuel
(v) Problems with fossil fuel
(vi) Alternative energy
(vii) It is a two-way process
(viii) Iron is the best
(ix) Engine power vs. clean emissions
(x) Greenhouse effect and global warming
(xi) The side-effect of one solution
(xii) Increase engine efficiency — how it works

Example:	Answer:
Paragraph A	v

1. Paragraph B ____________
2. Paragraph C ____________
3. Paragraph D ____________
4. Paragraph E ____________
5. Paragraph F ____________
6. Paragraph G ____________
7. Paragraph H ____________

The Problem of Fire Ironed Out

A It has been quite a while since man discovered fire. But it is only recently that he has learnt enough chemistry to think of improving it. Take fossil fuels, such as coal and oil, for example. They give off plenty of heat when they burn; unfortunately, they give off plenty of other things as well, including the particles that make up smog and soot, the carbon dioxide responsible for the greenhouse effect and the oxides of nitrogen and sulphur that help to make acid rain. A new fuel additive called Carbonex seems drastically to reduce emissions of particles and of nitrogen oxides. It may thus help to solve half the problems.

B To understand the solution, take a closer look at the problem. Fossil fuels are mostly made of carbon, which reacts with oxygen to produce carbon dioxide (in the case of coal) or carbon dioxide and water (in the case of petrol, diesel fuel and other refined oils). The combustion of fossil fuels is never quite complete. Small, unburnt particles of fuel always escape, often as black smoke. These particles contain cancer-causing chemicals and are ever more unpopular.

C There is a standard fix for this. To reduce the problem of incomplete burning, combustion chambers are routinely flooded with about 25% more air than they need to burn their fuel. The idea is to give the flame more oxygen and hence, increase the efficiency of burning. But there is a snag. Dry air is 21% oxygen and 78% nitrogen. Nitrogen, like carbon, reacts with oxygen at high temperature — in this case producing the nitrogen oxides (NOX) that help cause acid rain. When extra air is added to a combustion chamber, emissions of soot and smog go down but NOX emissions go up.

D Carbonex, invented by an academic chemist, Dr. David Farrar, at the University of Toronto, and developed by Velino Ventures of Toronto, tries to alleviate this. The active ingredient is a hydrocarbon molecule to which an iron atom is bound. The molecule acts as a carrier for the iron, letting it dissolve in organic liquids like oil and petrol. When sprayed into a flame at the same time as a carbon-based fuel, Carbonex makes it burn more efficiently. The result is fewer particles and less need for extra air.

E It seems to work at two points during burning. If Carbonex is sprayed into a stream of fuel entering a flame in a combustion chamber, it coats the fuel and deposits iron atoms on the surface of the fuel particles. As the particles enter the outer part of the flame, which is cooler than the core, the more volatile components in the fuel vaporize. The faster these vapours leave the fuel, the sooner oxygen can get to the surface of the fuel particle and react with the carbon. Carbonex appears to speed up the exodus. Fuel particles that survive the hot core of the flame contain several large and unhealthy molecules that do not burn well without a fuel additive. Carbonex also seems to lower the temperature at which these compounds burn, allowing them to disintegrate even while the fuel particle is cooling.

F Iron is not the only substance that can manage this trick; any metal should do. Barium, magnesium, manganese, cobalt, nickel and lead have all been tried as fuel additives, but all are toxic and so in disfavour. Iron was picked for Carbonex because it is non-toxic and very effective even in small doses.

G Over the past two years, Carbonex has been tested by an independent research group at the Battelle Memorial Institute in Columbus, Ohio. The researchers found that it reduced emissions of particles from diesel engines by 43% and increased the yield of energy from combustion by 1.5-3%. When tested in a light-fuel-oil industrial burner in Geneva, it cut emissions of particles by 67%; added to a coarsely ground bituminous coal it reduced NOX emissions by 25%. In addition to reducing NOX and virtually eliminating black smoke, Carbonex cut the amount of soot left behind in combustion chambers, and so made maintenance cheaper. The fuel additive paid for itself in increased energy efficiency.

H Although Carbonex could be used in petrol for cars, Dr. Farrar thinks petrol is already refined enough to make it unnecessary. The real need for his invention, he thinks, is in plants that burn coal and less refined oils such as furnace and bunker oil. Farewell to those dark satanic mills.

Questions 8-16

Using the words or phrases in the box below, complete the following summary of Reading Passage 1. Please note that there are more words and phrases than gaps. Write your answers in boxes 8-16 on your answer sheet.

vehicle
inside
incomplete
before
NOX
black smoke
industrial
outside
after
small
input
hydrocarbon
acid rain
emissions

When fossil fuels burn, they produce elements that pollute the air, worsen the greenhouse effect, and cause ___8___. To alleviate the problem of ___9___ combustion which produces particles and ___10___, a Canadian scientist invented Carbonex which is blended with the fuel ___11___ it burns. The iron atoms, carried by ___12___ molecules which are the base of Carbonex, dissolve in the liquid fuel. These atoms help the fuel to burn more thoroughly, promoting the engines' combustion efficiency and producing cleaner exhaust. The new product has been tested in America and Switzerland. The statistics show that it works better with ___13___ burners than with ___14___ engines. Not only does Carbonex reduce particle and NOX ___15___, and increase energy output, it also helps to make the ___16___ of engines cleaner, leading to cuts of maintenance costs.

Reading Passage 2:

(You should spend about 20 minutes on Questions 17-26 which are based on Reading Passage 2.)

The Order of Innovation

What do Charles Darwin, Nicholas Copernicus and Frank J. Sulloway have in common? The first two, of course, were revolutionary scientific thinkers: Copernicus established that the Earth revolves around the sun; Darwin discovered natural selection. And Sulloway? He's a historian of science at Massachusetts Institute of Technology who has discovered something else these two men — and indeed, most of the major innovators in science over the last 400 years — have in common: they were, like Sulloway himself, preceded in birth by at least one other sibling. Birth order, he found, is the most reliable indicator of whether a scientist will embrace or attack radical innovations.

The third of four children, Sulloway has spent 20 years — the last five of them in a windowless room in Cambridge, Massachusetts — searching out the birth order of 2,784 scientists who were on one side or the other of 28 scientific revolutions since the 16th century. With the aid of a grant from the MacArthur Foundation of Chicago, which subsidizes unusual research projects, he discovered that 23 of the 28 revolutions were led by later-borns.

You don't have to be a social scientist to join this debate. Every parent and every child has an opinion about the effect of birth order — his, hers and all of ours. But social scientists want to measure effects. And in recent years, several prominent scholars have argued that the birth-order impact on behaviour is a myth. In 1983, for instance, Swiss psychologists Cecile Ernst and Jules Angst published *Birth Order*, a book in which they examined all existing studies on birth order and concluded that it has no effect on behaviour. And last year UCLA sociologist Judith Blake concluded that birth order is significant only in families with more than seven children.

Sulloway's study took a different approach. He focused on the male-dominated world of science and the sole issue he measured was willingness to challenge established opinions. Those least likely to accept new theories were first-borns with younger siblings. They were followed by only children; next come later-born eldest sons (those with one or more older sisters and at least one younger brother) and later-born only sons. The most radical were younger sons with at least one older brother. "My data was drawn from all of the eminent people who spoke out on every innovation in science," says Sulloway. "There's no way that anyone can refute the data."

Sulloway's operative theory, which seems common-sensical enough, is that first-born children identify more readily with parental authority because, among other things, they are often put in charge of younger siblings. Through this identification, first-borns absorb the norms and values of society in ways that subsequent children do not. "The older child gets responsibility — he's the company man," says University of Michigan psychologist Robert Zajonc, who agrees with Sulloway. In contrast, Zajonc observes, "the younger one tests the limits, tries to see what he can get away with."

NOVEL PUZZLE: Applying the theory to scientific revolutionaries, however, can be tricky. Albert Einstein, a first-born, is clearly an exception to Sulloway's rule, although he says that most of Einstein's early acolytes were later-borns. But what of James Watson and Francis Crick, the pair, of first-borns who won the Nobel Prize for explaining the make-up of DNA? "Nobel Prizes are given for solving clever puzzles," says Sulloway — something first-borns are good at. First-borns, he contends, tackle officially sanctioned puzzles while later-borns flock to the untried and the novel.

Sulloway reckons Darwin (fifth among six children) as a true revolutionary because his theories were not only novel but considered heretical by Victorian churchmen. But Sigmund Freud, about whom Sulloway has written a book, proved too complicated to categorize according to birth order. The father of psychoanalysis was raised as a first-born because his two stepbrothers no longer lived at home when he was born. However, in his first three years, he was inseparable from his stepbrother's son, who was actually older; for that period Freud was a later-born. Freud's theory, too, is a hybrid: it is first-born oriented, says Sulloway, because it focuses on the parent-child relationship, but is later-born in its revolutionary impact.

Despite such conundrums, Harvard psychologist Jerome Kagan calls Sulloway's work "a brilliant study" and especially useful in studying extremes in behaviour. Indeed, Sulloway interprets the Reformation as a conflict between first-borns supporting Rome and later-born Protestants. John Calvin was a younger child, he notes, and so were most of the Anabaptists. And Martin Luther, though first-born, fits the pattern, Sulloway insists, because he resented his strict father. The conclusion, though yet to be verified, is already evident: life is a struggle, as Darwin argued, between children and parental figures, as Freud suggested. It's first-borns against everybody else, and the former are outnumbered.

Questions 17-20

According to Reading Passage 2, first-born and later-born boys display, among other things, the following different tendencies. Indicate if it is the first-borns or later-borns that display each tendency by writing first-borns or later-borns in boxes 17-20 in the answer sheet.

Example:	Answer:
identify with parental authority	*first-borns*

17. try new puzzles
18. challenge the rules
19. support Roman Catholic Church
20. accept new ideas

Questions 21-26

Do the following statements agree with Sulloway's finding as mentioned in Reading Passage 2? In boxes 21-26 on your answer sheet, write

YES	*if the statement agrees with it;*
NO	*if the statement does not agree with it;*
NOT GIVEN	*if there is no information about this in the passage.*

Example:	Answer:
The only child in a family is more likely to challenge his parents' authority than a child who has younger siblings.	*YES*

21. A boy who has elder sisters only is more likely to accept new ideas than a boy who has elder brothers.
22. Birth orders are very important in determining people's intelligence.
23. Sigmund Freud, a first-born, is a very good example of Sulloway's conclusion.
24. Later-borns tend to be more patient than first-borns.
25. Many of the major scientific breakthroughs were brought about by later-borns.
26. Scientific rebels are born, not made.

Reading Passage 3:

(You should spend about 20 minutes on Questions 27-39 which are based on Reading Passage 3.)

The Flying Phone Box

1 The strides made in satellite-communications technology in recent years are at last yielding benefits for air travellers, particularly executives who need to keep in touch with their offices. Five airlines — three of them based in the Asia-Pacific region — have recently equipped aircraft to offer outbound telephone calls to anywhere in the world using a new satellite system. And in the not-too-distant future, businessmen will be able to send faxes in flight, too.

2 Air Canada, Qantas of Australia, United Airlines of the US and Japan Airlines have at least one satellite-communication aircraft apiece. Hong Kong's Cathay Pacific Airways is also about to offer the service and several other airlines are expected to follow. The calls, dialled directly and charged to a credit card, will cost about US $9-10 per minute.

3 Phone communications from aircraft are not entirely new. For some time, telephones have been available to passengers on US internal flights, for example, and on private jets.

4 But these systems have used cellular phones operating on very high frequency (and also high frequency) radio links. These systems — the same links that keep pilots in touch with flight controllers — have either limited range or low quality and reliability, particularly over vast oceans such as the Pacific. By contrast, the new satellite service will provide clear links instantly to destinations around the world.

5 Several technological problems had to be resolved before the service could be introduced. One was to define an effective technical standard, Airinc 741, that guarantees compatibility among different manufacturers' avionics systems — essential if the service was to be truly global.

6 Another was to make reliable antennas small enough and light enough to mount on aircraft of different types. And a third was to perfect voice-coding algorithms, which tell machinery how to break down voice signals into digital signals for transmission at the standard rate of 9,600 bits a second.

7 A further drawback, for any type of call routed by satellite, is an uncomfortable time lag between words being spoken and received. Because of the distance that signals have to travel, there is a delay of about a quarter of a second. With airborne calls, there is the potential for a double delay as signals arriving via satellite at a ground station are passed on via another satellite to their destination.

8 To avoid this problem, ground stations have been equipped to identify calls from aircraft and route them to coaxial or fibre-optic cables for the second leg of their journey. Surface links, though long, are still considerably shorter than the 72,000-km round-trip into space. Most calls will, therefore, not suffer the double delay.

9 The International Maritime Satellite Organization (Inmarsat) approved the initial satcom system for commercial service last November, after two years of trials. Besides the handful of aircraft operated by the five major carriers who have signed on to the system, about two dozen company jets have fitted with the necessary equipment.

10 The technology has three components: antennas and associated equipment on board planes, communications satellites, and ground stations.

11 In the course of development, antennas have lost both their dish shape and several kilograms. Even so, antenna and avionics weigh as much as two occupied seats. One obstacle to further weight savings, however, is that lighter antennas are more easily confused by the plethora of satellites now circling the Earth.

12 The satellites themselves are provided by Inmarsat, a London-based cooperative of 64 nations. One operational satellite and several back-ups cover each of three zones — the Atlantic Ocean (East), the Pacific, and the Indian Ocean. A fourth zone, Atlantic Ocean (West), will go into action later this year.

13 Three consortiums are competing for airlines' business by setting up ground stations to accept calls bounced off Inmarsat satellites and channel them into telephone networks.

14 Skyphone, comprising British Telecom International, Norwegian Telecom and Singapore Telecom, has worldwide coverage through stations at Goonhilly, England; Eik, Norway; and Singapore. US satellite corporation Comsat has joined up with Japan's international operator, KDD, with ground stations in Yamaguchi, Japan, and Southbury and Santa Paula, on the US East and West Coasts.

15 In addition, the Société Internationale de Telecommunications Aeronautique, a cooperative owned by airlines, has combined with Teleglobe Canada, France Telecom and OTC of Australia to create Satellite Aircom, with ground stations in Perth, Australia; Aussaguel, France; Weir, Canada; and Niles Canyon, US.

16 According to Hans Karisen, Inmarsat's marketing manager for aeronautical services, the prospects for aircraft-satellite communications look particularly bright in the booming Asia-Pacific air travel market. Around the region, aircraft are flying full and carriers are better able to afford the roughly US $500,000 cost of equipping each airliner. But many carriers will order the equipment only for new aircraft rather than take existing ones out of service for lengthy modifications.

17 Satellite communications will also help improve flight efficiency. A system of voice and data links is already operating between aircraft and their operations centres which, for example, enables crews to obtain permission to change altitudes at the optimum time for fuel efficiency.

18 Crews can also call ahead for maintenance; an aircraft with a vibrating engine, for example, can be met on arrival by engineers who have already obtained computerized data on its behaviour. These communications, however, like most existing airborne telephones, mostly use radio links; in the future they, too, will be transferred to the satellite system.

19 The instant nature of the air-to-ground communication will also improve navigation, by allowing continuous reporting of aircraft positions. Indeed, a study by the International Civil Aviation Organization indicates that the technology could provide benefits worth between US $5-6 billion annually in fuel efficiency, faster repair turn-arounds and improved traffic flows through airports.

20 For the fidgety executive, meanwhile, air travel need no longer means a communications black-out. And some airlines are already developing data terminals that will permit passengers to change hotel and car-hire reservations, or contact their banks and brokers.

Questions 27-30

Decide what the following names (27-30) mean by choosing a letter A-D from the box below. Write the letters in boxes 27-30 on your answer sheet.

A. an airline
B. a telephone company in a particular country
C. a company jointly set up by several companies
D. a regulating body

Example:	Answer:
KDD	*B*

27. Satellite Aircom
28. Inmarsat
29. Qantas
30. OTC

Questions 31-33

To have reliable satellite telephone systems on aircraft, the following technical problems A-D are/were to be solved.

A. Define an effective technical standard.
B. Make small antennas to mount on aircraft.
C. Improve digitalization of voice signals.
D. Reduce the time lag between words being spoken and received.

Answer the following questions by writing the paragraph numbers in boxes 31-33 on your answer sheet.

Example:	Answer:
Which paragraph mentions problem C?	6

31. Which paragraph mentions problem A? ________

32. Which paragraph indicates it is difficult to solve problem B? ________

33. Which paragraph mentions how to solve problem D? ________

Questions 34-37

Choose NO MORE THAN THREE WORDS from the passage to fill the blanks in the following questions. Write your answers in boxes 34-37 on your answer sheet.

34-35. Apart from for passengers' use, satellite communication on aircraft can also be used to ________, call ahead for maintenance, and ________.

36. Aircraft crews keep in touch with control towers by using ________.

37. If double delay has to be prevented, ________ have to be used.

Questions 38-39

Use NO MORE THAN THREE WORDS from the passage to answer the following questions. Write the answers in boxes 38-39 on your answer sheet.

38. Which area is not covered by a satellite yet?

____

39. How much does it cost to install satellite telephone equipment onto one aircraft?

____

INTERNATIONAL ENGLISH LANGUAGE TESTING SYSTEM

PRACTICE TEST (Version Two)

ACADEMIC READING

TIME ALLOWED: 1 HOUR
NUMBER OF QUESTIONS: 40

Instructions

ALL ANSWERS MUST BE WRITTEN ON THE ANSWER SHEET.

The test is divided as follows:

Reading Passage 1	Questions 1-15
Reading Passage 2	Questions 16-27
Reading Passage 3	Questions 28-40

Start at the beginning of the test and work through it. You should answer all the questions. If you cannot do a particular question, leave it and go on to the next. You can return to it later.

Reading Passage 1:

(You should spend about 20 minutes on Questions 1-15 which are based on Reading Passage 1.)

Questions 1-8

Reading Passage 1 has nine paragraphs A-I. Choose the most suitable headings for paragraphs B-I from the list of headings below. Write the appropriate numbers (i-xiii) in boxes 1-8 on your answer sheet.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i) How the MLS works
(ii) What a compromise
(iii) A new standard is needed
(iv) The safest way to travel
(v) How the GPS works
(vi) Multi-mode landing devices
(vii) How the ILS works
(viii) ICAO & FAA — two conflicting bodies
(ix) The two transmitters
(x) The problems of the ILS
(xi) Troubled transition work
(xii) The function of the localizer
(xiii) Tips for a smooth landing

Example:	Answer:
Paragraph A	*iii*

1. Paragraph B ____________
2. Paragraph C ____________
3. Paragraph D ____________
4. Paragraph E ____________
5. Paragraph F ____________
6. Paragraph G ____________

7. Paragraph H ____________

8. Paragraph I ____________

Air Safety — Coming Down without a Bump

A When an aircraft starts to descend, passengers' stomachs sink, too. Over 40% of accidents happen during the relatively short time from the final approach to touch-down. Nevertheless, flying remains one of the safest ways to travel; even during approach and landing accidents are rare. For this, passengers must partly thank the Instrument Landing System (ILS), which was adopted by the International Civil Aviation Organization (ICAO) as a worldwide standard in 1949. Now a new standard is called for, to take advantage of advancing technology, but people cannot agree on which one.

B Any new system has to be very good. The ILS enables aircraft to land even when weather conditions allow the pilot to see only 75 metres (250 feet) ahead. Indeed, the ILS signals are sometimes fed directly into the flight computer so that an aircraft can land itself. The ILS signals come from two radio transmitters on the ground, each of which uses a different frequency.

C The "localizer" transmitter is at the opposite end of the runway to the landing aircraft and sends out a beam centred along the runway: this shows the aircraft's ILS receiver whether the aircraft is too far to left or right. The "glide-path" transmitter, which is close to the point where the aircraft will touch down, points a beam towards the incoming aircraft, angled up at three degrees: this tells the receiver whether the aircraft's descent is above or below the glide-path.

D Although the ILS has proved highly reliable, it has three significant defects. The most serious is reflection: signals can bounce off buildings and confuse the system. Even an aircraft that is taxiing or parked can cause problems. Second, some of the ILS frequencies are close to those used by FM-radio broadcasters who have been given permission to increase the power of their transmitters, which will interfere with ILS. The third problem is the lack of frequencies for airports that are relatively close together.

E So in 1978 the ICAO chose the Microwave Landing System (MLS) to replace the old ILS. The MLS also uses two radio signals from similarly sited transmitters to guide down aircraft, but there the similarity ends. The MLS uses narrow beams at a much higher frequency, sweeping back and forth across the path of incoming flights. A receiver on an aircraft registers when the beams pass and works out its angle to the runway from the timing of the signals. The new system is significantly less susceptible to interference than the ILS. And because its signals fan out wider, aircraft can make long curving approaches. This sometimes helps controllers manage traffic.

F Recognizing the complexity of organizing an orderly changeover which would affect thousands of airports and tens of thousands of aircraft, the ICAO set January 1st 1998 as a target for the MLS to take over. Airports around the world began to order and install MLS transmitters. However, in the early 1990s the smooth transition was thrown into chaos. America's Federal Aviation Administration (FAA) became increasingly convinced that the satellite Global Positioning System (GPS), which is owned and operated by America's Department of Defence, was a better option.

G This system allows anyone with a receiver to calculate his exact position from radio signals transmitted by a network of 24 satellites orbiting the globe. America's armed forces and increasing numbers of civilian sailors, pilots and walkers use it to navigate with great accuracy. The system works well and has the bonus that many aircraft already carry GPS receivers to help them find their way from one airport to another. Successful trials have already taken place and the FAA expects to authorize GPS landings in conditions where pilots can see at least 550 metres ahead by the end of the decade. This covers the many American airports which have generally good weather.

H All this convinced the Americans to abandon MLS last year, upsetting European aviation authorities, which were concerned that in a war the American military might close down civilian access to the GPS. Earlier this year, a special meeting of ICAO considered the conflict and came up with a compromise which keeps airports happy but will require aircraft to carry extra equipment. Airports which want to stick with ILS can do so. Those which support MLS can introduce it in place of ILS and those which want to use the GPS (or its Russian equivalent) are to be given time to bring their technology up to ICAO standards.

I For people who hoped for a world standard this looks like a mess. One answer may be the multi-mode receiver. These devices, which are now being developed by avionics firms in Europe and America, will give a consistent ILS-type display on the flight deck whether they are receiving signals from ILS, MLS or GPS. New approach systems might be accommodated by slipping more circuit boards into the receiver. Having lost the battle on the ground, the standardizers may yet triumph on the flight deck.

Questions 9-15

Complete the following summary of Reading Passage 1. Choose NO MORE THAN THREE WORDS from the passage for each answer. Write your answers in boxes 9-15 on your answer sheet.

A reliable landing device is needed by all passenger airplanes. The device that has been in use since 1949 is called ILS , which is basically made up of two transmitters and ____9____. It has been realized that some ____10____ exist and pose safety hazards to landing aircraft. Another landing device is the MLS, developed more recently. Compared with ILS, the MLS transmitters send out ____11____ frequency signals, which are less likely to be interfered by such things as ___12___ and FM radio signals. The latest development of science and technology has brought about ___13___ GPS, which works on a completely different principle from its two predecessors. It relies on radio signals transmitted by satellites and trials on airplanes have proven successful.

With the above three different systems, ___14___ are now having problems deciding which one to use as ___15___. One solution may be that airports can use anyone they like but aircraft will be equipped with a special device that responds to all of the three.

Reading Passage 2:

(You should spend about 20 minutes on Questions 16-27 which are based on Reading Passage 2.)

Questions 16-21

Reading Passage 2 has seven paragraphs A-G. Choose the most suitable headings for Paragraphs B-G from the list of headings below. Write the appropriate numbers (i-xi) in boxes 16-21 on your answer sheet.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i) Latex sensitivity and contraceptives
(ii) The future of latex
(iii) Latex rubber, useful but can be dangerous
(iv) It could be a nuisance to many people
(v) Doctors suffer too
(vi) Attention to latex sensitivity
(vii) The age factor and allergic reaction
(viii) The usefulness of latex
(ix) Latex can kill
(x) Children with spina bifida
(xi) It's both a medical and an industrial problem

Example:		Answer:
	Paragraph A	*iii*

16. Paragraph B ________
17. Paragraph C ________
18. Paragraph D ________
19. Paragraph E ________
20. Paragraph F ________
21. Paragraph G ________

Latex Sensitivity

A Christopher Robin wanted Father Christmas to bring him “a big red India rubber ball”; others have a less innocent enthusiasm for the sap of *Hevea brasiliensis*, the rubber tree. But though latex rubber is useful for many purposes, it also carries risks. Some people are highly sensitive to the stuff — so much so that they can die from being exposed to it.

B Nobody knows which or how many of the hundreds of proteins in latex provoke the allergic reactions that natural rubber causes in 1% of people. But whatever its cause, latex sensitivity is beginning to attract attention. Last week America’s Food and Drug Administration (FDA) joined forces with the Centres for Disease Control and the National Institutes of Health to sponsor an international conference in Baltimore on latex sensitivity. Almost 400 scientists, nurses, doctors and dentists, along with representatives of the rubber industry, turned up. The medical professions use latex a lot; they are well placed to notice adverse reactions and to deal with them.

C Consider as an example the latex cuff used when the bowel is filled with barium and examined with X-rays — a common procedure. That these barium enemas can cause anaphylactic shock, a life-threatening allergic reaction, has been known for decades. What is new is the discovery that the cuff of the enema nozzle can produce this reaction on its own. Of 407 such cases of shock reported to the FDA in the past four years, 15 have been fatal. There may well have been other cases, not recognized as being due to latex sensitivity. The largest manufacturers of the cuffs now make them of a synthetic material.

D Other patients at risk include children with spina bifida, a defect of the spine; these children usually cannot urinate without a catheter, and can face as many as 20 corrective operations before reaching adulthood, so they come into contact with all sorts of medical apparatus that contain latex. And for people predisposed to latex sensitivity, the more frequent and prolonged their exposure, the worse the reaction can become. These days, staff caring for children with spina bifida are aware of the potential for trouble; so precautions are taken to prevent their becoming sensitive to latex and to protect them if sensitized already. Most of the children are operated on in theatres that have been made as latex-free as possible, and none has been lost to shock.

E The danger affects health workers as well as patients. People who need to wear rubber gloves at work are the largest single group at risk, and the AIDS epidemic has greatly increased their number. Doctors, nurses, dental hygienists and laboratory technicians who used to wear gloves only occasionally now find themselves changing them as often as 30 times a day. And the cornstarch with which the gloves are often dusted spreads small amounts of latex all around the place. Some studies have found that as many as 10% of health workers have developed latex-related skin conditions or other allergic reactions. Should they then need an operation, or other medical procedure, entailing exposures to latex, they may run into further complications. Indeed, some sufferers have been so incapacitated by the problem that they have had to change jobs.

F Of course, other people use latex, too. The sensitivity was first noticed in someone using household rubber gloves. It can also afflict the users of condoms or diaphragms. No deaths have been reported in these groups, though, and levels of reaction are quite low. It is worth noting that the remedy for anaphylactic shock is adrenalin.

G Despite the worries, latex is such an exceptional material — nothing else so cheap is such a good, long-lasting barrier, while at the same time allowing tactile sensitivity — that there is no talk of getting rid of it. A better solution is to label products carefully and to screen people for sensitivity. In the longer term, refinements in manufacturing might make the substance less allergenic. Or people could use a different rubber; latex produced from guayule, a shrub which grows exuberantly in America's south-west, shows signs of having fewer allergens.

Questions 22-27

Do the following statements agree with the view of the writer in Reading Passage 2? In boxes 22-27 on your answer sheet, write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement does not agree with the view of the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example: Answer:

Workers in industry as well as in medical science are tackling the problem of latex sensitivity. *YES*

22. A number of children with spina bifida died recently of anaphylactic shock.
23. Latex sensitivity is usually caused by hereditary factors.
24. New materials are being developed to replace latex.
25. Fearful of catching AIDS, doctors and nurses use rubber gloves more often.
26. Anaphylactic shock — a life-threatening allergic reaction — has no cure.
27. Children are more likely to suffer latex allergic reactions than adults.

Reading Passage 3:

(You should spend about 20 minutes on Questions 28-40 which are based on Reading Passage 3.)

Counting the Jobless

Measuring unemployment is not as simple as it sounds

Few economic indicators are as politically charged as unemployment rates. Britain's Conservative government is often accused of having changed its definitions of unemployment to reduce the published rate. Unemployment rates are also used to judge the tightness of labour markets: declining rates signal a tight market for labour and hence, eventually, pressure for higher wages. And they are used to assess the degree of social pressure that is caused by joblessness. To many politicians, particularly in continental Europe, persistently high unemployment rates are a constant reminder of the failure of their economic policies. Yet official measures of unemployment, based on surveys of the labour market, may not be as useful as many think.

To qualify as unemployed in industrialized countries, a person must be without a job, taking active measures to find one and available to start work (usually immediately). Some maintain that this definition of unemployment is too loose. They point out that some of those counted as unemployed by official number crunchers may actually be working in the black economy. So high official unemployment rates may not necessarily mean that there is little upward pressure on wages. Others complain that the definition is too restrictive. Many people, such as those who are no longer actively looking for work, are classified as being out of the labour market. In fact, they may still be a big part of the jobless problem. One solution to this would be to use "non-employment" instead. This measure includes not just the unemployed, but other economically inactive people as well. It would capture those who had simply "dropped out" of the labour force, and might be a better guide to the impact of joblessness than standard rates.

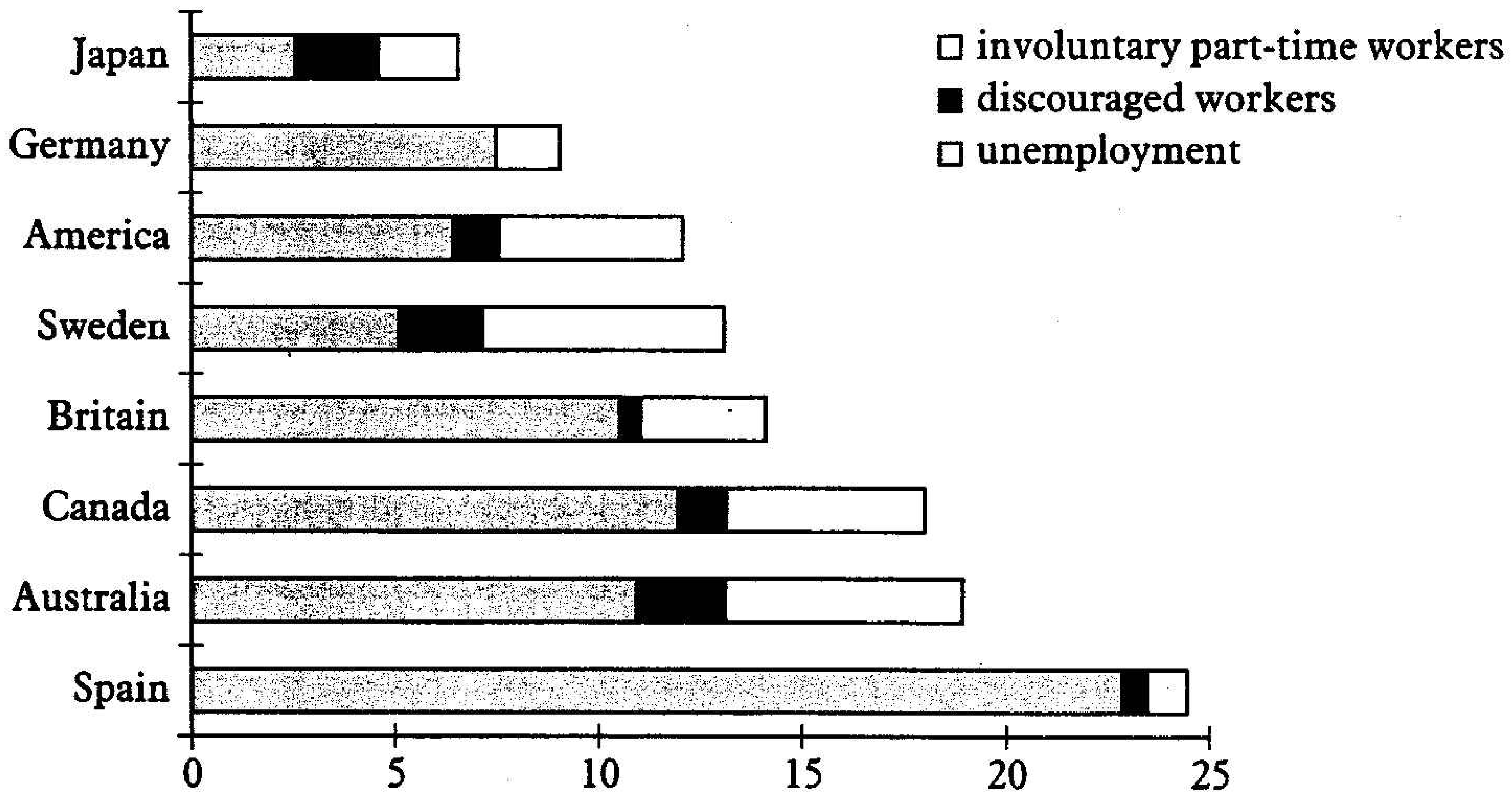
The snag with such a measure is that it is too broad to be useful. The "non-employed" include retired people, housewives, students and others who may not be able to work, or may not wish to. Thus, an increase in "non-employment" could even be a good thing — if, for example, it meant that more people were staying on longer in education.

An alternative approach is to try to supplement the coverage of the standard unemployment rate. Many economists reckon that two groups of people, in particular, should be added. These are "discouraged workers" (those who would like to work, but are not actively seeking a job because they do not think any suitable positions are available), and "involuntary part-time workers" (those who are working fewer hours than they would like, or who can find only a part-time job when they want a full-time one). Once such discouraged workers are added in, the argument goes, the unemployment rate will provide a better measure of any excess supply of labour.

In its latest *Employment Outlook*, the Organization for Economic Cooperation and Development (OECD) examines how useful these supplementary measures are. They certainly change the picture of unemployment substantially. In 1993, there were 4 million discouraged workers in OECD countries and 15 million involuntary part-time ones, compared with 34 million officially unemployed. Adding the two categories to the standard definition of unemployment would increase the total number of unemployed people in OECD countries by over 50%.

In some countries, the difference would be even more dramatic. Total unemployment would more than double in Japan, primarily because of discouraged workers. In Sweden, the number of involuntary part-time workers is higher than the number of officially unemployed. Even America's unemployment rate would suddenly look much less rosy (see chart). The effect would be to reduce the variation between OECD countries, though the overall ranking would not change much. Spain would still have the highest rates, Japan the lowest.

NOT WORKING: as % of labour force



Cross-border comparisons of these broader indicators are not straightforward, however. Measures of discouraged and involuntary part-time workers are not standardized in the same way as the official unemployment rate. In Germany, for instance, the category of "discouraged worker" does not even exist.

Measurement problems aside, the OECD raises a more serious concern about the whole concept of discouraged workers. The rationale for including them, rather than other categories of non-employed, is that they are supposedly closer to entering the labour market. Were they not discouraged, they could rapidly find a job.

But after looking at the statistical evidence, the OECD pours some cold water on this notion. For example, it points out that most discouraged workers have been jobless for over three years. Evidence from America, Australia and Norway suggests that they may actually find it harder than other non-employed people to get a job. This makes the measure less reliable as an indicator of labour market pressures.

In fact, the OECD reckons that standard unemployment rates are still the best way of gauging pressures in the world's labour markets. If the goal is to assess the broader social consequences of unemployment, then it seems odd to single out discouraged workers as opposed to some of the other non-employed. What is really needed is a far better understanding of why some people are not employed in the first place.

Questions 28-33

Complete the following summary of Reading Passage 3. Choose NO MORE THAN THREE WORDS from the passage for each answer. Write your answers in boxes 28-33 on your answer sheet.

Unemployment rates are one of the most important __28__ of the economic situation in a country. Measuring unemployment, however, is not as simple as it sounds. Because, basically, economists cannot agree on __29__ of unemployment. Some people are jobless but are not __30__ finding a job. Other people are under-employed, i.e., working __31__ they want to. People like these, if counted, would make unemployment rates go up by over 50% in some countries, and __32__ in some other countries. Opinion differences among these issues are as political as economic. Other concerns, such as why some people are __33__ and remain so for longer than should, are equally important.

Questions 34-40

Do the following statements agree with the view of the writer in Reading Passage 3? In boxes 34-40 on your answer sheet, write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement does not agree with the view of the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example:	Answer:
College students are counted as involuntary part-time workers.	*NO*

34. High unemployment rates and pressure for higher wages usually go hand in hand.
35. The definition of non-employment includes more people than the definition of unemployment does.
36. In Canada, there are more unemployed people than discouraged workers and involuntary part-time workers put together.
37. The Conservative government of Britain is responsible for the high unemployment rates in the country.
38. Figures of the "non-employed" are more indicative than figures of the unemployed.
39. Being unemployed means the same as being out of the labour market.
40. The longer people have been jobless, the more eager they are to find a job.

INTERNATIONAL ENGLISH LANGUAGE TESTING SYSTEM

PRACTICE TEST (Version Three)

ACADEMIC READING

TIME ALLOWED: 1 HOUR
NUMBER OF QUESTIONS: 40

Instructions

ALL ANSWERS MUST BE WRITTEN ON THE ANSWER SHEET.

The test is divided as follows:

Reading Passage 1	Questions 1-13
Reading Passage 2	Questions 14-27
Reading Passage 3	Questions 28-40

Start at the beginning of the test and work through it. You should answer all the questions. If you cannot do a particular question, leave it and go on to the next. You can return to it later.

Reading Passage 1:

(You should spend about 20 minutes on Questions 1-13 which are based on Reading Passage 1.)

The Oxford vs. Cambridge Boat Race

The boat race now has a strong American accent but it is still mostly won, and lost, by English public schoolboys

Sporting ritual draws friends and countrymen together. Every year in American, for instance, the Super Bowl empties shops and restaurants as families gather round their televisions to watch the football game. Americans abroad seek each other out to do the same, drink Budweiser beer and feel homesick.

In England, some of these annual rituals have a class dimension. Along with Henley, Cowes and Ascot, the most notable is the boat race between the universities of Oxford and Cambridge, which takes place for the 142nd time this weekend. If the weather is good, as many as 300,000 people may gather on the banks of the River Thames on Saturday April 6th to watch 16 sturdy men plus their coxes sweating over the 4.25-mile course. Actually, most people will see the boats flash past, catch up with friends from Oxbridge days, drink Pimms and lemonade (a peculiar concoction enjoyed by English society) and slip into a pub for the rest of the afternoon.

The race has always had an upper and upper-middle class taste. First rowed in 1829, it dates back to the glory days of Empire, when the young men in the boats would go on to rule the colonies. So it is ironic that in many of its practices the boat race is now more American than British. The coaches are well-paid. Both universities give perks to deserving oarsmen. Cambridge offers sports bursaries (athletic scholarships); Oxford sometimes provides free accommodation. Several of the oarsmen enter the universities to row rather than to study (although, as at the best universities in the United States, they still have to be up-to-scratch academically). The race is commercially sponsored and it is televised. Such characteristics are commonplace in American college sport but rare in Britain.

However, it is the fact that some of the rowers are not English, or even undergraduates, that really raises eyebrows in England. For some sports commentators, these are worrying signs of national decline.

They could not be more wrong. For one thing, foreign nationals have been rowing in the boat race for at least a century; for another, even in the past few years, when the race has been heavily sponsored by businesses with deep pockets, floppy-haired former pupils from famous English public (that is, expensive private) schools have continued to predominate, as they always have.

Besides, the Americans who row in the race are usually as aristocratic as Americans can be. This year there is one American in the Cambridge boat and four in the Oxford boat. Some learnt to row at exclusive boarding schools; all studied at ivy-league colleges before coming to Britain.

Rowing is intrinsically a sport for the affluent. Any school that offers it must also have a river, or at least access to one. The equipment is expensive, and is getting more so as new training devices are developed — such as rowing tanks, where oarsmen can row indoors.

Men do not reach their peak strength, however, until their late 20s — and rowing is a sport where strength matters. Rowers of Olympic standard can effortlessly lift grown women as if they were little children. So it is not surprising that as Oxford and Cambridge have increased the numbers of graduate students that they accept, the number of graduate students rowing in the boat race has increased, too.

This means that the boat race produces rowing of a high standard. Both boats consistently contain national oarsmen and sometimes Olympic medal winners — although the sporting-career pattern of the rowers has changed. When fewer graduate students rowed, the event was the start of an international career; now it may be the end. Oarsmen who have rowed in almost every race that matters come to one of these two universities for their swan song.

Earlier this century, members of Oxford and Cambridge university cricket, athletic and rugby teams were also world class. They are now well below that standard. Only the boat-race teams have remained of international calibre, at least in a good year. Or so it is said. Actually proving it is quite difficult. One of the oddities of the boat race is that the teams rarely race against anybody else. Other rowing teams are now just gearing up for the summer rowing season. But for the Oxbridge oarsmen, the boat race is the culmination of six months of hard training; and after the race the teams tend to splinter, often never to row together again.

But, proof aside, the experts are confident that in rowing at least Oxbridge is still world class. Exactly why rowing has remained within reach of international standards while other Oxbridge sports have slipped is something of a mystery. The money, of course, helps — rowing standards are driven in part by technology. The dedication to training that the boat race exacts is perhaps another part of the explanation. In America, college teams are forbidden to practise more than a certain number of hours a week; no such rule holds in England.

Given all this, it will be interesting to see the outcome of the next race. The Oxford-Cambridge boat race is watched because it has always been watched and because these two universities continue to fascinate the English.

Questions 1-8

Complete the following summary of the passage. Choose NO MORE THAN THREE WORDS from the passage for each answer.

The Oxford-Cambridge boat race started in 1829 and has become an __1__ event important for almost everyone who is or was linked to the two universities. The race, however, is losing its tradition in several ways. First, it is becoming more and more commercial: __2__ coaches, businessmen with deep pockets, advertisements and extensive TV coverage. Secondly, many oarsmen come to Cambridge or Oxford __3__ rather than to study. They are either given scholarships or __4__. Furthermore, more and more __5__ students are rowing. Some people think these changes indicate the __6__ of the United Kingdom.

Rowing is an expensive sport. Many oarsmen who have rowed for Cambridge or Oxford were former pupils of public schools that only __7__ parents could afford to send their children to. These schools usually have access to a river and expensive facilities like __8__. Other factors that contribute to the strength of the two teams include new sports technology and oarsmen's and their coaches' dedication to training.

Questions 9-13

Do the following statements agree with the writer of the passage? Please write

YES	*if the statement agrees with the writer;*
NO	*if the statement does not agree with the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example: Answer:

The Oxford-Cambridge boat race is held once every four years. *NO*

9. The oarsmen in the Oxford vs. Cambridge boat race have remained exclusively English until very recently.
10. The Oxford-Cambridge boat race is losing its tradition.
11. Many oarsmen in the Oxford-Cambridge boat race, after having participated in the race, give up their sporting career.
12. The two teams often take part in other international racing events.
13. The Oxford team trains for more hours than the Cambridge team.

Reading Passage 2:

(You should spend about 20 minutes on Questions 14-27 which are based on Reading Passage 2.)

Could Air Force One Be Hit?

A heat-seeking surface-to-air missile hurtles skyward faster than the speed of sound. In a matter of seconds, it can zero in on a plane, blasting it from the sky in a sickening burst of flame and smoke. Moreover, such missiles are all too available to terrorist groups and criminals around the world. Last week US intelligence reports indicated that the Colombian cocaine cartels may be stockpiling just such anti-aircraft devices. The fear is that the drug lords could use them to mount an attack on President George Bush when he flies into the Colombian city of Cartagena for a four-nation anti-drug summit starting Feb. 15.

Could the President's plane be shot down? US military experts say the chances of a guerrilla group mounting a successful air attack on Air Force One are extremely small. Although the exact nature of the plane's defenses is top secret, they are known to be formidable. Not only can the President's Boeing 707 be protected by a full complement of military fighter jets, but the plane is also loaded with sophisticated electronic safeguards.

The heart of the defense rests in a collection of computerized equipment mounted in the 707's cockpit. There, at a console packed with indicator lights and video monitors, a specially trained electronics war officer can monitor the air-space around Air Force One. Should danger be indicated, he can unleash several electronic countermeasures, including radar jammers, fine-tuned infrared flares and billowing clouds of metallic chaff.

The most serious threat comes from surface-to-air missiles (SAMs) launched either just before the President's plane lands or just after it takes off. Although the Colombian drug cartels have apparently never used such weapons before — and there is still no hard evidence that they have acquired them — there are certainly plenty of SAMs, primarily US-made Stingers and Soviet-built AS-7 Grails, available through illegal channels. Both are portable, shoulder-mounted rockets that use tiny infrared sensors to home in on the heat generated by a jet engine.

The standard defense against a heat-seeking missile is to divert it with another heat source, typically a flare that emits a broad range of infrared radiation. The missile, drawn by the heat of the flare, follows it and not the plane. But modern SAMs are equipped with filters that can cancel out radiation from a simple flare. Air Force One is believed to carry flares that burn brighter and longer in the infrared frequencies that the SAMs' sensors follow.

But not all missiles are heat seekers. Air Force One must also be protected against radar-directed air-to-air missiles, like the French-built R-530's that Colombian air force jets are known to carry. These rockets spot their prey with radar beams and follow the echoes toward the target. One way to divert a missile flying along a radar beam is to fire off a burst of metallic chaff particles. They cause the missile's radar guidance system to go haywire amid a blizzard of electronic gibberish.

A more artful way to avoid an incoming missile is to deceive it with false or misleading radar signals. Air Force One is equipped with a variety of sophisticated jamming equipment designed to do just that. One widely used technique: delaying the echoes of incoming radar pulses, thus fooling the attacker into calculating that its target is farther away than it really is. Alternatively, the target plane may generate dozens of false radar echoes, each aimed slightly differently, creating the impression of a whole squadron of planes arrayed at various intervals across the sky.

Clever as these tricks may be, the equipment in Air Force One is primitive compared with what is being installed in the jumbo jet scheduled to start transporting the President in October. That $325 million "flying Taj Mahal," a specially modified Boeing 747, bristles with so much computerized hardware that it needs 57 antennas and 238 miles of wire to support its electronics. Says an official involved in its construction: "We put every last piece of modern gimmickry in that plane."

Determined to protect its Commander in Chief from all threats, the Air Force included features that would enable his plane to survive an atomic attack, as long as a bomb did not explode too close by. Rather than use silicon computer chips and copper wire, which can melt down in the electromagnetic pulse that follows a nuclear blast, the designers are loading up the new 747 with pulse-resistant fibre-optic cable and gallium arsenide chips. Barring a direct hit from an H-bomb, the new plane should enable the President to fly anywhere in unprecedented safety and comfort.

Questions 14-20

Do the following statements agree with the view of the writer in Reading Passage 2? In boxes 14-20 on your answer sheet, write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement does not agree with the view of the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example:	Answer:
The President's Boeing 707 is protected by fighter jets and electronic defence systems.	*YES*

14. The drug lords in Columbia have managed to acquire SAMs through illegal channels.

15. R-530s, made in France, are shoulder-mounted rockets.

16. An airplane is more vulnerable when it is landing or taking off.

17. Generating series of radar echoes may lead the missiles to believe that there are more than one target.

18. Copper wire is replaced with pulse-resistant fibre-optic cable because the former is heavier.

19. Modern SAMs are made to be more clever and cannot be fooled by ordinary planes.

20. The old Air Force One is still performing its duty.

Questions 21-23

The following are parts of the defense system of Air Force One. Match their corresponding function by choosing a letter from the column on the right. Write the letters in boxes 21-23 on your answer sheet.

21. flare
22. chaff
23. jamming equipment

A. divert the missiles with another heat source
B. mislead the guidance system of radar-directed missiles
C. confuse the missiles' radar with metallic particles

Questions 24-27

Complete the table below. Write your answers in boxes 24-27 on your answer sheet.

Item	Simple Definition
Example: AS-7 Grail	*surface-to-air missile*
Flying Taj Mahal	24.
25.	air-to-air missile
Stinger	26.
H-bomb	27.

Reading Passage 3:

(You should spend about 20 minutes on Questions 28-40 which are based on Reading Passage 3.)

Thalidomide's Return

1 Bundled in a stark white hospital blanket, Rafael looks like any other month-old baby. But when his mother, Luciene Das Dores, unwraps the snug cover, the sight is shocking: Rafael has no arms or legs. "I got very upset and started to cry when I first saw him," says Das Dores, 23, a part-time cleaning woman who lives in Belo Horizonte, Brazil. "When I saw him with only a head and a torso, I was devastated. I wanted to kill myself." She could not help feeling guilty: unaware that she might hurt her baby, she had taken the powerful sedative thalidomide during her pregnancy.

2 Her story is a flashback to an old nightmare. Yes, Das Dores took the same medication that made headlines 33 years ago when it produced 12,000 severely deformed children around the world. But while the word thalidomide became synonymous with tragedy and its use as a sleeping pill was banned, the drug did not disappear. In fact, it has benefits that have made it an increasingly valuable medicine when used carefully. Misuse, however, has caused a grim side-effect: the reappearance of "thalidomide babies."

3 Trouble strikes when patients don't know about thalidomide's dark side — and when those selling and dispensing the drug don't give adequate warning. Although the US has strict rules governing thalidomide's use, controls are much laxer in some other parts of the world. The consequences are now apparent in Brazil, which has at least 46 new instances of birth defects caused by thalidomide. If there are cases in other countries, they haven't received the same publicity, but given the increasing use of the drug, health officials fear that the problem will be widespread.

4 A few years after the initial thalidomide disaster, researchers discovered that the drug has an almost miraculous ability to treat complications of leprosy. Then they learned they could use it against some of the potentially fatal side-effects of bone-marrow surgery. The past year has brought reports that the drug may help fight tuberculosis, a common cause of blindness called macular degeneration and even AIDS.

5 Brazil is one of the largest producers of thalidomide because it is home to perhaps 300,000 people who suffer from leprosy. About 30,000 of them take the drug to soothe the excruciating pain and eradicate the lesions that occur in severe cases of the infection. The only alternative treatment, corticosteroids, does not work as quickly or as completely. "The pain was so great that I couldn't walk," says Irani, 24, a former patient at the Santa Isabel leper colony. "I almost died. Thalidomide was my salvation."

6 Irani was lucky to have a doctor who cared enough to take precautions. They administered the drug only after putting her in a hospital, where they could make sure she did not become pregnant. But some doctors give out prescriptions without telling patients of the danger, much less keeping them under observation. In other cases, the patients who are often poor and barely literate, ignore or misunderstand what they are being told.

7 Greed also comes into play. Although only two companies are authorized to produce the drug in Brazil, several underground laboratories reportedly sell it to people without a prescription. Health authorities shut down on illicit operation last year, after a TV-news crew showed how easy it was to buy the pills.

8 The resurgence of birth defects is especially painful for members of Brazil's first thalidomide generation, born around 1960. They believe the government has not done enough to warn women and have started their own education campaign. "People still believe this kind of thing is God's punishment or even a side-effect of leprosy," says Rosangela Nascimento, head of the Thalidomide Victims Association.

9 In the meantime, US scientists are trying to find out more about how thalidomide works. They have learned that the drug, besides having sedative effects, blocks two important processes in the body. The first involves the production of a substance called tumor necrosis factor, or TNF, which fights both malignant cells and infections. But if too much TNF is produced, as apparently happens in leprosy, AIDS and tuberculosis, the body makes itself sicker. The second process stymied by thalidomide is the creation of new blood vessels, which is crucial to the development of arms and legs in the fetus. The eventual goal of researchers is to alter thalidomide somehow so that it continues to inhibit TNF without harming nascent arteries and veins.

10 Such efforts will be of little comfort to the families of children like Rafael. Until thalidomide is made safe, governments will have no choice but to regulate the drug tightly and publicize its perils.

Questions 28-30

Answer the following questions by choosing appropriate letter(s) and write the letter(s) in boxes 28-30 on your answer sheet.

28. The reason that Das Dores took thalidomide was that she was suffering from
    A. AIDS.
    B. leprosy.
    C. macular degeneration.
    D. side-effects of bone-marrow surgery.
    E. sleeplessness.
    F. tuberculosis.

29. What are the reasons for the dangers of thalidomide to be neglected or ignored, as mentioned in Reading Passage 3?
   A. Prescriptions are needed to buy the drug.
   B. Some doctors are not responsible.
   C. Some patients are illiterate.
   D. The number of victims is limited.
   E. Thalidomide pills can be obtained through illegal channels.

30. What is the main idea of the passage?
   A. Alternative methods to treat leprosy should be researched in order to replace thalidomide.
   B. Tougher rules regarding prescribing thalidomide should be applied so as to avoid what happened to Das Dores.
   C. Three decades after maiming thousands of children, the drug is increasingly useful — but perilous as ever.
   D. Though thalidomide has miraculous ability to treat complications of leprosy, it is not clear how it works.
   E. Governments' inattention and thalidomide victims' silence to the problems caused by thalidomide have led to the return of the drug.

Questions 31-37

Choose NO MORE THAN THREE WORDS from the passage to fill the blanks in the following questions. Write your answers in boxes 31-37 on your answer sheet.

31. Another kind of medicine used to treat leprosy is __________.

32. Brazil is one of the largest producers of thalidomide because there is a large number of __________ cases.

33. Thalidomide can lead to severe __________.

34. Thalidomide was originally used for its __________ effects.

35. Too much TNF in a patient's body makes him/her feel __________.

36. Lepers take thalidomide to __________.

37. Thalidomide stymies __________ new blood vessels.

Questions 38-40

Answer the following questions by writing the paragraph numbers in boxes 38-40 on your answer sheet.

Example: Which paragraph says that thalidomide is a multi-function drug?	Answer: *4*

38. Which paragraph explains how thalidomide works?
39. Which two paragraphs mention how some Brazilians may obtain thalidomide?
40. Which two paragraphs indicate that it is governments' responsibility to let people realize how serious the side-effects of thalidomide can be?

INTERNATIONAL ENGLISH LANGUAGE TESTING SYSTEM

PRACTICE TEST (Version Four)

ACADEMIC READING

TIME ALLOWED: 1 HOUR
NUMBER OF QUESTIONS: 40

Instructions

ALL ANSWERS MUST BE WRITTEN ON THE ANSWER SHEET.

The test is divided as follows:

Reading Passage 1	Questions 1-14
Reading Passage 2	Questions 15-27
Reading Passage 3	Questions 28-40

Start at the beginning of the test and work through it. You should answer all the questions. If you cannot do a particular question, leave it and go on to the next. You can return to it later.

Reading Passage 1:

(You should spend about 20 minutes on Questions 1-14 which are based on Reading Passage 1.)

Questions 1-8

Reading Passage 1 has nine paragraphs A-I. Choose the most suitable headings for paragraphs B-I from the list of headings below. Write the appropriate numbers (i-xi) in boxes 1-8 on your answer sheet.

NB *There are more headings than paragraphs so you will not use all of them. You may use any of the headings more than once.*

List of Headings

(i) Different opinions about biotechnology products
(ii) Developing pest resistant plant
(iii) It is up to the biotechnology industry, not FDA
(iv) Potential dangerous consequences — bioengineered food now might be pesticides 40 years ago
(v) Delicious and nutritious dinner. But is it safe?
(vi) Recombination of DNA — how it works
(vii) There are better ways to produce food than using biotechnological methods
(viii) FDA is taking up all precautions necessary to ensure that biotechnological products are safe
(ix) One product of bioengineering technology — a new breed of tomato
(x) Good news for the business but consumers are entitled to know what they are eating
(xi) One member of the herbicide family, and its problems

Example:	Answer:
Paragraph A	*v*

1. Paragraph B ____________
2. Paragraph C ____________
3. Paragraph D ____________
4. Paragraph E ____________

5. Paragraph F __________
6. Paragraph G __________
7. Paragraph H __________
8. Paragraph I __________

A Mystery in the Lunchbox

A Hungry? Sit right down, we're having catfish, corn on the cob, baked potatoes and fresh tomatoes. This might turn out to be the most nutritious meal of your life. It might even be the best-tasting dinner you ever had. On the other hand, it might induce an allergic reaction — even though you're not allergic to any of these foods. Still hungry? *Bon appetit!*

B Last week's announcement that the US federal government would impose no special regulations on bioengineered foods, in effect permitting them to be marketed exactly like nature's own, heralds a potentially vast change in our food supply. Virtually, any characteristic of a living organism may now be transferred to another organism; with a few exceptions, the resulting product may be placed on supermarket shelves without federally mandated testing or special labeling. "We will not compromise safety one bit," Vice President Dan Quayle told the press. "And the consumer will enjoy better, healthier food products at lower prices." Many specialists in biotechnology agree — in fact, they see consumers around the world benefiting from a new, genetically-engineered green revolution — but critics are urging the government to move ahead more cautiously. A potato that resists disease with the help of chicken gene? A catfish that grows like lightning, thanks to a gene from a virus? Some believe new products like these, which may be on the market by the end of the decade, call for a new regulatory system. "We should have learned from the history of regulating pesticides that we never knew the long-term consequences until it was too late," says Ellen Haas, executive director of Public Voice for Food and Healthy Policy, a Washington D.C.-based advocacy group. The Food and Drug Administration maintains that most bioengineered foods present no special safety issues. "We're saying this is just another plant-breeding technique," says Eric Flamm, deputy director of the FDA's Office of Biotechnology.

C Here's how bioengineering works: all cells contain DNA, the long molecule shaped like a double helix. A gene is a swatch of DNA that controls a certain characteristic of the organism. In the 1970s, scientists discovered they could clip off a gene-length swatch from a DNA molecule, and later they learned to affix it to a different DNA molecule — a cut-and-paste job that became known as gene splicing and results in what's called recombinant DNA. Immediately, visions of carrots with the flavour of peanut butter began dancing in the imaginations of scientists and food writers alike. But most current experiments are less exotic. In many ways, the new technology differs little from traditional cross-breeding. "One of the powers of the technology is that you make simple and direct changes and alter the food as little as possible," says William Belknap, a plant physiologist at the Department of Agriculture's Agricultural Research Service in Albany, California.

D The first example of recombinant DNA in a form suitable for lunch makes its debut next summer: the Flavr Savr tomato. Scientists at Calgene, Inc., a biotech company based in Davis, California, isolated the gene in the tomato that triggers the enzyme responsible for rotting and rendered it inactive. Rather than having to be picked hard and green for easy shipping, the tomatoes stay on the vine about five days longer than usual. They can be shipped without refrigeration, which also helps retain flavour, and they'll resist rotting for more than three weeks, twice as long as their conventionally grown cousins. They aren't perfect: like other supermarket tomatoes they're grown with pesticides, they may be waxed, and they still lack the last three to five days of vine-ripening that home-grown tomatoes enjoy. Sampled at Calgene's headquarters, the Flavr Savr tasted fine; whether consumers still find it worth a dollar more per pound remains to be seen.

E Several companies are hard at work on plants that will repel pests. Monsanto, a St. Louis, Missouri, chemical company, expects to put many such products on the market before the end of the decade, including cotton resistant to the cotton bollworm and a potato that kills the Colorado potato beetle. The weapon of choice is *Bacillus thuringiensis*, or BT, a soil-dwelling bacterium that creates a protein crystal that is toxic to certain insects but harmlessly digested by humans. BT has been used for 30 years as an organic pesticide. Scientists can transfer the gene for the toxin into plant cells, and the new plants will produce their own insecticide. Like traditional insecticides, however, these may simply spur the creation of new, more resistant pests. According to Belknap, the solution will be to splice several toxins into a given plant, thus lessening the potential for insects to develop resistance (or inviting the birth of some pretty amazing insects).

F Monsanto is also developing herbicide-resistant plants, specifically Roundup-resistant plants. Roundup is one of Monsanto's most lucrative products, a herbicide with sales of a billion dollars a year. It has been recognized as noncarcinogenic by the Environmental Protection Agency though it's toxic to fish. Roundup is used as a weed-killer, but it will kill everything else it touches in the field, so farmers have had to apply it carefully. Now, however, Monsanto can isolate the enzyme in, say, corn, that is fatally vulnerable to Roundup. A corn plant engineered to have twice as much of that enzyme can lose a chunk of it to Roundup and still survive. Critics charge that this technology simply invites farmers to use more Roundup. Jim Altemus, manager of public affairs for plant science research at Monsanto, says the aim is to help farmers manage their crops. "Some herbicides are better than others; they can't all be classified as bad," he says.

G Biotechnology companies were delighted by the FDA's green light, but not surprised; research conducted by the International Food Biotechnology Council, an industry-funded consortium of scientists, found no safety problems with biotech foods. Environmentalists and other consumer advocates don't claim the new foods are unsafe by definition, but they do call for tougher scrutiny than the FDA believes is necessary. "The regulations do a lot more to protect the industry than they do to protect the American consumer," says Rebecca Goldburg, a senior scientist at the Environmental Defense Fund, an advocacy group. "The public has a right to know what's in its food."

H Goldburg and other critics are especially concerned about potential allergens that may be hiding in new products — an orange touched up with a gene from a cherry, for instance. The FDA requires no special testing or labelling unless the new food is substantially different from its traditional version. If the new orange had no vitamin C, for example, it would have to be labelled. A new food containing a "common allergen" would also have to be labelled, but as examples of common allergens the FDA suggests only eggs, milk, fish, shellfish, tree nuts, wheat and legumes. The truth is, almost any food is an allergen to someone; just because the FDA doesn't cite zucchini as a frequent danger to the public doesn't mean a consumer biting into an apple might not get a very unwelcome surprise. According to the FDA, it's up to the biotechnology industry to police itself on potential allergens. "If you move a gene, you have to prove it is not allergenic or you will have to label it," says Flamm.

I Other critics are uneasy about making such dramatic changes with such speed. "We ought to be testing these changes in large populations over large periods of time," says Greg Drescher, a director of Oldways Preservation & Exchange Trust, a Boston-based think-tank for food issues. He also questions how useful the new foods really are. "We don't *need* to play sorcerer's apprentice with agriculture," he says. "We know how to produce good-tasting food in this country. There are much better ways to eat healthfully than a food supply based on techno-foods." Jeremy Rifkin, the activist who has been fighting biotechnology for years, promises lawsuits and a massive publicity campaigns, and he thinks the public will be on his side. "If people don't want foods pumped full of hormones and antibiotics, they are never going to go along with genetically-engineered foods," he says. At the very least, these critics may persuade the FDA to require more labelling of the new foods.

Questions 9-14

Do the following statements agree with the view of the writer in Reading Passage 1? In boxes 9-14 on your answer sheet, write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement does not agree with the view of the writer;*
NOT GIVEN	*if there is no information about this in the passage.*

Example: Answer:

Flavr Savr tomato is more expensive than ordinary tomatoes. *YES*

9. The general public so far have responded to bioengineered food positively.
10. Carrots with the flavour of peanut butter are available in ordinary supermarkets.
11. Roundup is a very effective pesticide.
12. Biotechnology methods are used to produce tomatoes that soften later than usual.
13. Though BT is toxic to fish, it is harmless to human.
14. Biotechnology methods applied in food industry are more profitable than similar methods applied in medical science.

Reading Passage 2:

(You should spend about 20 minutes on Questions 15-27 which are based on Reading Passage 2.)

A Dying Breed

Karoshi — death by overwork, is a major problem faced by Japanese employers and employees alike. By some reckonings, up to 10,000 Japanese die from it annually — grim testimony to the fierce dedication among workers which has helped propel Japan to a position of supremacy in key global industries.

Japan has, in fact, been reducing average working hours for some time. The number fell marginally to 2,052 hours in 1990 from 2,111 in 1987. The latest figures, however, are still 100-200 hours a year more than those worked in the West. More importantly, these official tallies exclude unrecorded overtime, work taken home, and commitments such as entertaining clients on golf courses at weekends.

Thus, the national target of cutting average annual work hours to 1,800 by 1995 seems a tall order. It will require Japanese to take more holidays, as well as cut their working week. Legislation to cut standard weekly hours to 40 from 44 is expected to come into force next January, along with requirements that overtime pay exceed the current minimum of 125% of regular pay.

More to the point, will Japanese workers take their extra time off? Most employees currently use only seven to nine days out of annual leave allocations of two to four weeks. Their actual leave is, therefore, roughly half that taken by US workers and about a third of that taken by the Germans and the French. (Japan also has 13 annual pubic holidays, and some companies do offer extra days off.)

In a recent survey conducted by a Tokyo-based think-tank, 40% of those interviewed said they were "uncomfortable with taking paid holidays", while another 41% said they would be "at a loss if given vacations lasting a month." One common explanation for these sorts of results is that Japanese love to work. "We were taught as a child that diligence is the finest virtue," says a 38-year-old journalist.

This traditional attitude is strongest among the post-World War II generation which single-mindedly pursued economic development. Many of the people now at the top of Japan's big corporations, as well as in senior positions in government, are from this generation. And if these senior executives do not take holidays, few junior staff dare to do so in a society which values group action. As a result, millions of Japanese annually compete for leisure facilities during the national Golden Week and New Year breaks, when everyone stops work at the same time. "We feel secure when everybody is doing the same thing," says the journalist.

The view that the employee should devote almost all his or her waking hours to the work unit is further promoted by the traditional system of near-lifetime employment. Many of today's graduates and white-collar workers, however, would prefer to leave the old system behind in favour of finite labour contracts with their companies.

Japan also needs to change retirement rules that virtually force employees to remain at work until their 60th birthdays if they are to qualify for the lump-sum payments — typically ¥20-30 million — that supplement pensions. One advocate of such a move is Hitotsubashi University Professor Iwao Nakatani. He acknowledges, though, that this might require major changes in Japan's state pension and social security systems to compensate for reducing company provisions.

Some big companies have begun making changes to work regimes. Sanyo and Matsushita, for example, plan to reduce the number of working hours to 1,800 by March 1994, while Sharp hopes to achieve the same goal by the late 1990s. Canon has even given its staff 16 consecutive days of vacation this summer. These cases, however, are the exception.

Moreover, a key caveat in the push towards more-relaxed work routines — as with other broader issues in the workload debate — is that changes agreed to by big companies may prove beyond the reach of small and medium-sized firms. By international standards, these smaller enterprises comprise an unusually large share of Japan's economy and represent a considerable obstacle to change.

Currently, they are grappling with a chronic labour shortage at a time when the costs of labour-saving capital investment are rising. And times will get tougher as the economy slows and big companies squeeze their suppliers harder. "We are not talking about working less, but about how to maintain the same volume of work as last year," says a spokesman for an Osaka-based small-business association.

Nonetheless, the new economic pressures now being felt by Japan are likely to produce changes whatever the outcome of the workload debate.

The collapse of the Tokyo stock-market and with it the era of warrant and convertible-bond issues has raised the cost of this once-popular form of financing from around 1% to nearer 5%-6%. Debt-servicing costs have also risen with higher interest rates. Companies have been cut off from cheap credit and manufacturing investment has slumped. The result is likely to slow down productivity gains.

Profits have, meanwhile, declined sharply on the back of reduced domestic and overseas demand, and of higher depreciation costs associated with earlier capital investment. The corporate sector is under pressure, too, from institutional investors and the Ministry of Finance to increase dividend pay-out ratios.

Questions 15-17

Some ideas presented in Reading Passage 2 are listed in the box below. Please answer the following questions by selecting appropriate letter(s) and write the letter(s) in boxes 15-17 on the answer sheet.

A. Some employees are now given more days off.
B. Japan's state pension and social security system needs to be changed.
C. Japan is a society in which individuals are expected to conform.
D. The five-year economic boom ended as the Tokyo stock-market collapsed.
E. Japan's post-war work ethic is under threat.
F. Traditional system of near-lifetime employment is still in prevalence.
G. Economic development was the single most important concern in the post-World War II period.
H. Domestic and overseas demand for Japanese products is shrinking, causing profit declines.

15. Which THREE in the above list contribute to the workaholism in Japan?

16. Which ONE in the above list indicates that situation in Japan is changing?

17. Which ONE in the above list is the best summary of the main idea of Reading Passage 2?

Questions 18-27

Complete the following summary of Reading Passage 2. Choose NO MORE THAN THREE WORDS from the passage for each answer. Write your answers in boxes 18-27 on your answer sheet.

Japanese enterprises have dedicated employees whose workaholic tradition has helped __18__ Japan's economy and made the country into an __19__ superpower. It is believed that there are cultural, historical and economic reasons behind the tradition. For example, the __20__ payments for employees who retire at the age of 60 is a comfortable addition to the state __21__.

Recently, there has been pressure — both from domestic and overseas — for that tradition to change. As a result, __22__ are reducing the number of work hours. A lot of small and __23__ companies, however, may not afford to do so, as they are finding it difficult to __24__ their business. What has happened to Japanese economy recently, for example, the collapse of the __25__, the shrinking of domestic and overseas __26__, are likely to influence the change in employees' __27__. It will be interesting to see how things develop.

Reading Passage 3

(You should spend about 20 minutes on Questions 28-40 which are based on Reading Passage 3.)

Trouble with Computer Networks

Each new year since the birth of the personal computer has been hailed as "the year of the network". This year is different. This time it is " the decade of the network". Do not hold your breath.

Market researchers at Dataquest in Silicon Valley think that American companies' worldwide sales of the hardware and software needed to make personal-computer networks will grow by about 25% a year for the next two or three years. That is faster than the growth expected for personal computers themselves, but still not the boom that many had predicted. The step-by-step evolution of computer standards makes booms unlikely.

Standards are the key to successful networking. If they are to communicate, computers must all speak the same language. Everything from how to establish a connection over the telephone to how to detect and correct errors must be agreed in detail at the outset. Devising flexible, reliable standards takes time; building reliable programmes based on them takes yet more. To see how complicated the process can be, look at what ought to be a fairly simple step in the evolution of computer networks: the ability to share files between machines.

Most of the basic problems of sending the strings of 0s and 1s that make up computer data from machine to machine have been solved. This does not mean that one machine can be plugged straight into another, or that networks do not suddenly and mysteriously break down. But there are, at least, procedures for diagnosing and repairing breakdowns and overcoming incompatibilities. Computer files are merely named collections of data. In theory, knowing how to send data should make sending files a snap. Unfortunately, in computing, things are never so simple. There are three or four different "standards" for sharing files. The differences between them lie not so much in how they solve the problem, but in how they set it.

Start with the Network File System (NFS) created by Sun Microsystems, the leading manufacturer of high-powered Unix workstations. NFS is probably the best means of swapping files between different types of computers. It enables one computer to get at files stored on another as if they were its own. That is much harder than it sounds.

Simply getting 0s and 1s from one machine to another provides no guarantee that the recipient can make sense of them. The string of 0s and 1s which denotes the letter "A" on most IBM mainframes means something else altogether on an IBM PC — as does the string which denotes the number 3.14. NFS must translate from one to another. It must also keep track of details such as the different naming conventions for files used by different machines. Most personal-computer file names, for example, can be only 12 characters long. Those for other operating systems can be much longer.

But NFS is less good at letting personal computers share files among themselves. It was created for, and often runs on, high-powered workstations. These use the Unix operating system which does lots of things that Microsoft's DOS (the most popular operating systems for personal computers) does not. For example, it handles the co-ordination necessary for a computer to do two things at once. And Unix, unlike DOS, ensures that the computers in a network do not all try to get at the same file at the same time. The inventors of NFS, therefore, did not have to worry about such things.

When it came to working with DOS, America's Novell, the leading maker of personal-computer networks, built these features into its technology. So did 3Com, its biggest rival. Meanwhile, Microsoft, the largest personal-computer software company, is taking another approach. To make best use of today's more powerful personal computers, it is promoting a new operating system, called OS/2. Microsoft has joined up with 3Com to develop a new technology to get OS/2 to work with networks; it is called LAN Manager.

Because Microsoft built both the operating system and the network software, LAN Manager probably makes best use of the facilities OS/2 offers for managing communication over networks. But it is, inevitably, different from both DOS-based networking software and NFS. So customers face several choices even about the humble task of getting computers to share files. There is a yet more bewildering array of solutions to even more complicated problems, such as getting computers to share work. No wonder many customers want a bit of time to think before they buy; meanwhile the decade of the network ticks by.

Questions 28-36

Fill in the blanks below with words taken from Reading Passage 3. Use NO MORE THAN TWO WORDS for each answer. Write your answers in boxes 28-36 on your answer sheet.

Example:	Answer:
Computer data consist of _______ 0s and 1s.	*strings of*

28. Successful __________ depends on standards.

29. A very important feature of networking is that computers __________.

30. Talking about the difference between standards, how the problem is __________ is more important.

31. To get best performance out of the modern personal computers, Microsoft has developed a new __________.

32. Compared with __________, sharing files is a simpler task.

33. The boom, predicted by many, has not happened mainly due to problems of __________.

34. DOS allows up to __________ to be used for its file names.

35. When letting computers share files, NFS works better with __________ of computers than with personal computers.

36. Building reliable programmes takes longer time than __________ reliable standards.

Questions 37-40

The following are different kinds of software. Decide whose product each is by choosing appropriate letter(s) for each company. Write your answers in boxes 37-40 on your answer sheet.

Example:	Answer:
DOS	*B*

37. NFS
38. Unix
39. OS/2
40. LAN Manager

A. Sun Microsystem
B. Microsoft
C. 3Com

INTERNATIONAL ENGLISH LANGUAGE TESTING SYSTEM

PRACTICE TEST (Version Five)

ACADEMIC READING

TIME ALLOWED: 1 HOUR
NUMBER OF QUESTIONS: 38

Instructions

ALL ANSWERS MUST BE WRITTEN ON THE ANSWER SHEET.

The test is divided as follows:

Reading Passage 1	Questions 1-16
Reading Passage 2	Questions 17-29
Reading Passage 3	Questions 30-38

Start at the beginning of the test and work through it. You should answer all the questions. If you cannot do a particular question, leave it and go on to the next. You can return to it later.

Reading Passage 1:

(You should spend about 25 minutes on Questions 1-16, which are based on Reading Passage 1.)

A Corking Row

A Some drinkers may still think that the term "corded wine" refers to the bits of cork in a bottle where the stopper has crumbled or fallen into the wine. But more and more now know that it actually refers to mustiness or cheesiness in the wine, with overtones of vegetable rot or old socks, caused by a taint which can be raced to 2, 4, 6-trichloroanisole. This contaminant, known as TCA, is so powerful that, according to one expert, half a tablespoon of pure TCA could "destroy all the wine produced in the United States". And even if the wine is not actually mouldy, TCA can flatten the taste, removing flavours the wine maker has laboured long and hard to provide.

B The increased awareness is largely due to the battle now waging between defenders of the traditional cork stopper and its opponents, who believe that an unacceptable percentage of wine is affected by "corkiness". Unfortunately, the battle has developed into a dialogue of the deaf. No one knows exactly how to evaluate the positive contribution made by cork to the quality of a wine, which some claim has to do with its porosity, which allows a desirably slow oxidation — though this is controversial. To complicate matters estimates of the "corkiness" due to defective corks rather than to the wine or to bad storage vary between less than 1% and 8%.

C In Britain, cork's defenders have unleashed a ferociously negative (and largely counter-productive) public-relations campaign. They have attacked plastic substitutes as imparting their own impurities and claimed that their use would destroy the cork-oak forests of Spain and Portugal, together with their dozens of rare species of birds. This has merely alerted the majority of wine drinkers who had previously attributed the nastiness of any particular bottle to their own inadequate palates — for the top 5% of palates are 200 times more perceptive to the faults in a wine than the bottom 5%.

D The public battle started when a number of big British supermarket groups stated flatly that any systematic fault was as unacceptable in wine as it was in any other product. They were joined by American and Australian producers more aware of profit margins than more traditional wine makers and less inclined to accept the idea of cork contamination as an inescapable act of God. The battle has, belatedly, forced the cork industry into action. For years, the price of cork had been increasing and the quality declining as the cork oaks were stripped of their precious bark too frequently. The processes remained primitive and continued to rely on the use of chlorine washes which increased the likelihood of contamination. Today washes have been changed, quality control tightened and more care, generally, is taken that the corks are not exposed to moisture which encourages the development of TCA during the manufacturing process. Today corks can be treated in a process called INOS designed to use its inherent sponginess as a way of squeezing out possible contaminants. Amorim, the biggest producer, not only uses INOS but has also introduced a new cork "twin top" based on those used in champagne — where the cork's centre is made of agglomerated cork (cork granules stuck together) topped and tailed with slivers of pure cork.

E But even Amorim and other quality-conscious producers such as Sabate are going to have to accept that plastic corks — and the screw caps used in many cheaper wines in the United States and by the Swiss for even their finest bevvies — are going to take an increasing share of the market. This is not because they are cheaper. They aren't, and they create their own problems: the perfection of the seal they provide means that the air in the bottle has to be expensively removed before the stopper is inserted, and they are harder to extract than their natural competitors, although they do provide the expected satisfying plop when the bottle is opened.

F One obvious winner is the Supreme Corq from America, devised after its inventor had seen plastic bungs being used to seal the casks in some of the classiest estates in France. It is made from a recyclable, inert thermoplastic polymer used to store medicines — a field where cork was abandoned 80 years ago — thus answering many of the accusations hurled at plastic closures.

G How likely is the wine-stopper war to end in open hostilities? The fact of the matter is that demand for wine in bottles (as opposed to wine in bags) is growing faster than the supply of properly prepared cork, so there is actually plenty of room in the market for different types of stopper. At the top end of the market, that does not necessarily favour plastic. For nobody can yet tell whether plastic stoppers will remain sound for the 20 or more years during which the greatest wines mature before they are drunk. On the other hand, "the top end" accounts for a very small amount of the total wine drunk, and plastic's chances look correspondingly better. As over 90% of all wine is consumed within a year of being bottled (and within 24 hours of being purchased) for most drinkers the argument about the long-term effects of plastic will seem fairly theoretical. In the end, all the participants in the row ought to be able to agree with Supreme Corq's marketing director, Brooke Hilton, who says: "We are only in existence to get a better bottle of wine to the drinker."

Questions 1-6

Reading Passage 1 has seven paragraphs A-G. Choose the most suitable heading for each paragraph from the list of headings below. Write the appropriate numbers (i-ix) in boxes 1-6 on your answer sheet. Paragraph D has been done as an example.

NB *There are more headings than paragraphs so you will not use all of them. You may use any heading more than once.*

List of Headings

(i) Cork stoppers are losing the market to plastic ones
(ii) The damaging effect of the cork supporters' campaign
(iii) Better wine quality in the long run
(iv) The INOS process used in treating corks
(v) The war between the two camps
(vi) Corked wine and its source
(vii) The improvement of wine industry
(viii) A winner of the battle
(ix) The problems of plastic corks

1. Paragraph A __________
2. Paragraph B __________
3. Paragraph C __________

Example: Answer:
Paragraph D *vii*

4. Paragraph E __________
5. Paragraph F __________
6. Paragraph G __________

Questions 7-16

Do the following statements agree with the view of the writer in Reading Passage 1? In boxes 7-16 on your answer sheet, write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement contradicts the view of the writer;*
NOT GIVEN	*if it is impossible to say what the writer thinks about this.*

Example:	Answer:
Corkiness arises only when the corks are defective.	*NO*

7. "Corked wine" refers to wine contaminated by TCA.
8. TCA may be present in many kinds of drinks.
9. TCA makes mouldy wine taste worse.
10. Cork defenders and opponents are waging a war to increase the consumers' awareness of the contaminant.
11. British cork defenders' campaign might impair the wine industry.
12. American and Australian wine producers are more quality-conscious.
13. The use of cork has damaging environmental impact on Spanish and Portuguese oak forests.
14. Traditional wine makers are inclined to believe that cork contamination is inevitable.
15. Chlorine washes largely used in the manufacturing process degraded wine quality.
16. Plastic corks are largely used in cheaper wines.

Reading Passage 2:

(You should spend about 20 minutes on Questions 17-29, which are based on Reading Passage 2.)

Japan Grapples with a Breakdown of Discipline in Class

Neat ranks of immaculate schoolchildren in sailor suit uniforms bowing to their teacher at the start of class is the standard image of school life in Japan. But teachers and pupils talk increasingly of a "collapsed class" syndrome which can range from small incidences of lax discipline to violence and even murder at schools.

The breakdown in discipline is being blamed on an increasingly individualistic society and coping with it is proving a sharp learning curve for all concerned.

Official figures show that violence in Japanese schools is on the rise. In 1998, the latest year for which annual figures are available, cases of violence rose 25.7 per cent compared to the year before.

A total of 29,685 cases were reported at primary, junior high and middle schools. Most of the incidents also rose 19.2 per cent. Government officials said students were expressing their frustration and stress through violence and were less able to exercise self-control.

- In January last year, two 15-year-olds at Matsuda Junior High School, west of Tokyo, assaulted five teachers who had told them off. One teacher suffered a fractured cheekbone.
- In Tokyo, two 14-year-olds attacked a teacher because he asked them to stop playing mah-jongg in class.
- In Hokkaido, five junior high school pupils set fire to their school and a building at another school, which was destroyed. Acts against school property are not even counted in the statistics.
- In 1998, a 13-year-old boy stabbed his teacher to death because she criticized him for being late. The murder sparked a debate about violence and knives in schools.

Hiroo Shiga, 50, a primary school teacher, has never seen anything as bad in his 30 years in the profession. He says teachers who are used to well-behaved pupils are having to learn to deal with collapsed classes, where individuals disrupt proceedings for everyone else. "Kids talk back, they sit in class openly reading books which aren't the textbook and walk out of class when they feel like it. Once a group of boys started playing ball in the back of the class while the teacher was teaching," he said. "There is no respect for the teacher any more."

Masao Asami found out about his son's collapsed class from another parent. The boy, then 12, was singled out as a troublemaker, but Mr. Asami thinks the teachers were equally at fault. "In my son's class, the kids would insult the teacher and shout. Once they threw knives at each other and chucked plates out of the window," he said. But the teacher ignored the situation. The troublemakers in turn ignored her.

In addition, children, especially boys, are increasingly carrying knives to school. A survey last year by the Management and Coordination Agency questioned 1,270 children who had been either questioned by the police or were registered as juvenile delinquents. Of them, 13.5 per cent of high school boys, and 13.3 per cent of junior high school boys said they carried knives. Schools, however, have not yet turned to security guards and metal detectors. And guns are unheard of. Most violent acts in Japanese schools are less serious than those at schools in the United States and Europe.

A report commissioned by the prime minister to set out a vision for the 21st century suggested such radical moves as shortening the school week to three days with the remaining two to be filled with activities of the parents' and pupils' choice paid for by a voucher system. The idea is to foster individualism and creativity. Soon afterwards, Education Minister Hirofumi Nakasone announced a review of Japan's basic law on education, which has not been changed in 50 years.

But some fear that fostering individualism will lead to a further breakdown in discipline.

Kazuko Narui, a teacher and education consultant, says that parents share much of their own playing computer games. They arrive at school without knowing the most basic rules of good behaviour.

"They used to learn the rules by living in a close-knit community where they played outside and had older children looking after them, now they have no guidance," she said.

The image of rigid, rule-bound institutions, however, may never have been very accurate, according to Tim Clifton, a British teacher who has taught English in junior high schools near Tokyo for three years. He feels Japanese schools have more rules, but they are less strictly enforced than elsewhere. "It's almost as if hundreds of minor rules have been invented to give pupils something to rebel against," he said. To his surprise, truancy is widely tolerated, with some students being allowed to turn up at school just for lunch.

But he said serious misdemeanors are severely punished. One boy had his hair dyed back to black in the staff room after breaking the no-hair-dying rule.

And the lack of discipline is taking its toll on teaching staff. Newcomers and veterans alike are stressed out; half the sick days teachers took last year were for stress-related illnesses.

Questions 17-29

Complete the summary below. Choose NO MORE THAN THREE WORDS from the reading passage and write them in boxes 17-29 on your answer sheet.

Japan is now __17__ a breakdown of discipline in schools. Violence between students and __18__ is on the rise at schools due to __19__ on the part of the students. In __20__ classes, students ignore the teacher and disrupt proceedings. However, according to __21__, teachers should be blamed because they ignore the students' misdemeanors. Unlike the situations in American and European schools, most violent acts are __22__ in Japanese schools and __23__ are not in use. A report suggested that the school week should be shortened to three days with __24__ to be filled with activities of parents' and pupils' own choice so as to encourage __25__. But this may result in a worse __26__. An educator says that children used to live in a __27__ and play outside, getting __28__ from older children. But now they spend too much time on their own. According to a British teacher, however, Japanese schools have many rules that are not so __29__. As a result of the students' rebellion against school discipline, many teachers got stress-related illnesses.

Reading Passage 3:

(You should spend about 15 minutes on Questions 30-38, which are based on Reading Passage 3.)

Waiting in the Wings: Technology to Fight Gridlock in the Skies

It is so congested at US airports these days that planes coming from the West Coast to New York often start lining up around Chicago.

That may sound like a vaudeville line, but unfortunately it is a fact. And the situation is only going to get worse: While more than 650 million commercial passengers flew in the United States last year, that number is expected to grow to 1 billion by 2015, the Federal Aviation Administration says.

With gridlock only a breath away, a handful of technologies have emerged that proponents say will increase the capacity of strained airports and reduce delays at squeeze points in the air traffic control system. Right now, air traffic controllers locate planes with radar and guide them by voice communication — safely but relatively slowly — to increase the space between planes or hold them back at the first sign of a problem.

While the computer support available to controllers is limited now, satellite, computer and communications technologies may lend a hand in the future. New software may help adjust traffic as planes approach the airport and calculate flight trajectories to give more warning of possible problems. One of the most powerful systems, based on Global Positioning System technology, may one day supplement or even replace radar.

"Possibly you can get more aircraft through the pipeline," said Richard Lay, a programme manager at the Federal Aviation Administration who is evaluating the GPS-based technology. "When the whole system goes to pot because of one little choke point, this technology is designed to keep planes going at a certain speed and not have tie-ups."

The technology Mr. Lay is evaluating tells pilots in their cockpits the exact position, speed and altitude of nearby aircraft, information that can now be picked up only by the controllers in their control centres and airport towers.

Larry Speelman, director of business development at UPS Aviation Technologies, a subsidiary of United Parcel Service of America Inc. that manufactures the technology, said that with global positioning technology, each airplane would broadcast its position to other planes. "Instead of radar having to paint all the airplanes to get their location," he said , "each aircraft will have a lighted sign saying, 'Here's where I am, and here's where I am going.' "

The system, called ADS-B, for Automatic Dependent Surveillance-Broadcast, works this way: Pilots know their own positions from their GPS receivers, which use precise timing signals emitted by a network of satellites. The planes can broadcast that information from cockpit to cockpit, letting nearby aircraft know exactly where they are, and they can send the information to ground systems. ADS-B can be more accurate than radar. It updates itself every second, while radar information is relayed only after a complete sweep or two of the area surveyed, which often takes as long as six seconds. And unlike radar, it works at low altitudes and can be used to track lanes on runways. It also would be a simple matter to equip fuel trucks and other vehicles that operate on runways and taxiways with a GPS receiver and a low-power transmitter to broadcast the data. Controllers would then be able to monitor all the traffic on the ground, even when visibility is poor.

Another innovation being tested by the Federal Aviation Administration is software that predicts where planes will be in 10 or 20 minutes, something that turns out to be very hard to estimate.

"It's surprisingly difficult to predict when, for instance, a cross-country flight will actually show up," said R. John Hansman, a professor in the department of aeronautics and astronautics at the Massachusetts Institute of Technology and director of the international centre for air transportation there. "If you look at the times for a year of flights from Los Angeles to New York, there's 20 to 30 minutes' variability, depending on, say, how strong the tailwind is."

The new software, known as conflict probe technology, predicts the aircraft's trajectory, allowing time for controllers to make necessary changes and avoid backups.

Digitized communication between pilots and ground controllers is also expected to speed the flow of traffic. Right now, such communication is almost entirely by voice; with digital communication, text and graphics will be sent straight to the cockpit. "Graphical information to the cockpit is important," Mr. Hansman said. "Presently you can get better weather information in your hotel room by turning on the cable TV than you can in the cockpit."

Another tool is being developed by the National Aeronautics and Space Administration under the direction of Heinz Erzberger, a senior scientist at the agency's Ames Research Center in California. Mr. Erzberger is the chief designer of an air traffic controller system called CTAS.

The software has a traffic management system, "software that helps controllers push the right amount of traffic through the system — neither more nor less," Mr. Erzberger said, "as well as final-approach spacing software that helps controllers order the flow of traffic so aircraft get to the correct runway in the best order."

A CTAS prototype is at work at Dallas-Fort Worth International Airport. Contractors are adapting the technology to other airports although Mr. Erzberger said the process could take another three to four years.

Questions 30-33

The reading passage mentions several new technologies that will be used to improve the air traffic control system. Match the technologies with the appropriate performance. Write the appropriate numbers (i-v) in boxes 30-33 on your answer sheet.

NB *There are more technologies than performances so you will not use all of them. You may use any technology more than once.*

List of New Technologies

(i) ADS-B
(ii) CTAS
(iii) UPS technology
(iv) Conflict probe technology
(v) Digitized communication technology

30. Informing the pilots the exact position, speed and altitude of nearby aircraft

31. Predicting where planes will be, thus allowing time for necessary changes

32. Sending graphical information to the cockpit

33. Assisting air controllers in getting the right amount of traffic through the system

Questions 34-38

Complete the sentences below with words from the reading passage. Use NO MORE THAN THREE WORDS for each answer. Write your answers in boxes 34-38 on your answer sheet.

34. Because of congestion at US airports, planes flying from the West Coast to the East Coast have to __________ at a middle point.

35. Currently, planes are positioned by radar and guided by __________.

36. GPS-based technology will enable each airplane to __________ to other planes.

37. With __________ systems, controllers would be able to track all the traffic on the ground.

38. The CTAS system helps airplanes to get to the correct runway in __________.

INTERNATIONAL ENGLISH LANGUAGE TESTING SYSTEM

PRACTICE TEST (Version Six)

ACADEMIC READING

TIME ALLOWED: 1 HOUR
NUMBER OF QUESTIONS: 41

Instructions

ALL ANSWERS MUST BE WRITTEN ON THE ANSWER SHEET.

The test is divided as follows:

Reading Passage 1	Questions 1-13
Reading Passage 2	Questions 14-29
Reading Passage 3	Questions 30-41

Start at the beginning of the test and work through it. You should answer all the questions. If you cannot do a particular question, leave it and go on to the next. You can return to it later.

Reading Passage 1:

(You should spend about 20 minutes on Questions 1-13, which are based on Reading Passage 1.)

Airlines Wage War on Ticket Ruses

A All may be fair in love and war, but not when it comes to airfares. Airlines are waging a war against travel agents and travellers who exploit anomalies between different types of fares and conditions or fares at either end of a route due to currency rates or competition in a given market.

B "Creative ticketing" and "fare construction" techniques — under the International Air Transport Association's "maximum permitted mileage" system that allows you to travel up to 25 per cent more miles between two points at little extra cost — are legitimate ways to save money. Such devices as "combined ticketing," whereby you make separate round trips on the same ticket, or "split ticketing," where you buy two one-way tickets at each end to take advantage of currency rates and competition (or lack of competition), are standard procedure for a good business travel agent.

C The challenge is to beat the system. What angers airlines on both sides of the Atlantic is the growing use of "back-to-back" ticketing. This is a ploy of savvy travellers who buy two round-trip excursion tickets with Saturday night stay restrictions, using the outward coupon of each ticket and throwing the other half away; they save more than half the cost of a normal midweek return. The cheapest flexible ticket you can buy — even in the back of the plane — can cost more than three times an excursion fare.

D The magazine *Holiday Which?*, published by the Consumers' Association in Britain, highlights in its current issue the plight of "Ms. G," a traveller from London to Dallas who sought to save 300 pounds of the cost of a midweek fare by buying two round-trip excursion tickets. American Airlines check-in staff confiscated both tickets and forced her to buy a new full-fare return at a cost of 1,111 pounds.

E United Airlines, TWA, US Air, Northwest and Delta Airlines say that the use of back-to-back tickets violates their "tariff rules". The airlines' threatened sanctions take the form of "debit memos" to "delinquent" travel agents — who risk losing their IATA license — and denied boarding to travellers.

F Al Comeaux, a spokesman at American, said: "Back-to-back ticketing violates the contract that passengers have with the airline, even if you use all coupons. You are agreeing to stay a Saturday night. If someone is taking up a seat by telling us they're doing something else, they are taking a seat from us that could be used by someone who needs it at the last minute."

G Isn't it my prerogative to choose whether to use a seat that I've paid for? Do the airlines expect to sell the same seat twice? What really exasperates them, of course, is that their branding is out of sync with travellers' needs — inviting us to beat the system. Travel agents say that some corporations insist on back-to-back ticketing or they'll go somewhere else — often to the airlines themselves. Many airlines sell back-to-backs to favoured frequent fliers.

H Reasons for the crackdown are that carriers feel stronger in what is still a sellers' market; there is a growing disparity between front-cabin and cattle-class fares, and new software detects back-to-backs and bills agents for the difference in fare or stops the traveller at the gate.

I William Gaillard, a spokesman for IATA in Geneva, says: "Airlines prohibit the nonsequential use of ticket coupons. For example, business class fares out of London to the US are notoriously higher than other cities in Europe. So if you route Frankfurt-London-New York-London-Frankfurt and don't use the Frankfurt-London coupon, that is not allowed under IATA rules." He adds: "But the rules may change. They are under investigation right now by the Office of Fair Trading in Britain and the EU Commission."

J Matthew Davis, manager for consulting services at American Express in London, says: "We're raising these issues with IATA on behalf of clients who find it hard to understand that we're not always able to do what they want because of our contracts with airlines."

K "There are some devices that are within the rules, such as the extra coupon at the end. For example, if you make a round trip from London to New York, it can be cheaper to go on to Paris than it is just to go from New York to London. So you'd either not use the final coupon or use it for a separate trip. That happens quite a lot. But it varies from one country to another. Some practices in Belgium, for example, would not be allowed in Britain."

Here's a checklist to help avoid problems at check-in:

- Use ticket coupons in sequence. Airlines may cancel your onward journey if you skip an immediate sector.
- Who cares if you fail to use a final coupon! But never travel on "cross-border" tickets whereby you depart from a fictitious point, say, Nairobi, throw away the first coupon and start from London. No reputable travel agent will sell such a ticket. When buying a ticket from a "bucket shop", check the top right-hand corner to see where it was issued. If it shows a foreign address or if the first coupon has been torn out, it could be "illegal" or stolen.
- Try buying back-to-back tickets direct with the airline. Airlines break their own rules, especially for frequent flier members. Keep a record of the transaction. If you strike trouble, it gives you a solid case with check-in staff.

- Buy separate tickets with different airlines for a back-to-back combination, for example, between Nice and London, buy one round-trip excursion with British Airways and another with British Midland. Or else buy tickets from two different travel agencies with different IATA registration numbers.
- Should you be denied boarding or asked to pay the cost of a full-fare return, seek alternatives, such as buying a one-way ticket or a round-trip excursion ticket or a round-trip excursion ticket with another airline. Never submit to interrogation or hand over other tickets that are not relevant to that particular flight.
- Stay cool. Remember that you may be breaking airline rules but you are not doing anything "illegal".

Questions 1-10

Reading Passage 1 has eleven paragraphs (A-K). Choose the most suitable heading for each paragraph from the list of headings below. Write the appropriate numbers below (i-xiii) in boxes 1-10 on your answer sheet. Paragraph A has been done for you as an example.

NB *There are more headings than paragraphs so you will not use all of them. You may use any heading more than once.*

List of Headings

(i) A breach of contract
(ii) Possible punishment illegitimate ticketing might incur
(iii) The cheapest business fare
(iv) The war being waged
(v) The experience of an unfortunate traveller
(vi) What is behind the action against the delinquents
(vii) Tips from an agent
(viii) What legitimate ticketing involves
(ix) IATA's attention required
(x) "Back-to-back" ticketing
(xi) Who is at fault?
(xii) Travellers' needs taken into consideration
(xiii) Coupons must be used in order

Example:	Answer:
Paragraph A	*iv*

1. Paragraph B ________
2. Paragraph C ________
3. Paragraph D ________
4. Paragraph E ________
5. Paragraph F ________
6. Paragraph G ________
7. Paragraph H ________
8. Paragraph I ________
9. Paragraph J ________
10. Paragraph K ________

Questions 11-12

Choose the appropriate letter(s) A-D and write them in boxes 11 and 12 on your answer sheet.

11. Which of the following is (are) "legitimate" way(s) to save money according to airlines?
    - A. Back-to-back ticketing.
    - B. Combined ticketing.
    - C. Creative ticketing.
    - D. Split ticketing.

12. Which of the following use of ticket coupons is (are) "illegitimate"?
    - A. Route Frankfurt-London-New York-London, but don't use the Frankfurt-London coupon.
    - B. Route Frankfurt-London-New York-London, but don't use the New York-London coupon at the end.
    - C. Route Frankfurt-London-New York-London, but skip the London-New York sector.

Question 13

The writer gives the reader a number of suggestions to avoid problems. Which THREE of the following suggestions are mentioned? Write your answers (A-E) in box 13 on your answer sheet.

List of Suggestions

A. Never use back-to-back ticketing as you may be denied boarding.
B. Never use ticket coupons nonsequentially.
C. You don't have to use the final ticket coupon.
D. Don't buy a ticket with the first coupon torn out.
E. Don't buy back-to-back tickets from travel agents.

13. ______________________________

Reading Passage 2:

(You should spend about 20 minutes on Questions 14-29, which are based on Reading Passage 2.)

The Call of Nature

One of the most popular characters in *Dr. Who*, a British television science-fiction series, was a robotic dog called K9. On June 1st, science fiction became science fact when Sony launched its latest product, Aibo. Described as "a one-of-a-kind artificially intelligent pal", Aibo is a dog that never needs to be walked, fed or washed. Nor does it make a mess or get into fights with other dogs. It has stereo microphones for ears, can recognize colours and shapes, and emits a variety of bleeps and chirps. A sensor in its head can distinguish between an amiable pat and a reproachful slap. And the pause button on its chest means it can be switched off and left in a cupboard when you go on holiday.

A good joke, and a profitable one (the first batch of 3,000 machines, priced at just over $2,000 each, sold out within 20 minutes). But behind the marketing spiel about Aibo's autonomous behaviour patterns, simulated emotions and instincts, "lovable shape" and "four highly expressive legs", lurks a serious point. Aibo is merely the latest example of a robot inspired by biology.

This makes sense. Millions of years of evolution have already solved difficult design problems in locomotion, manipulation, sensing and navigation in almost every environment in which a robot might conceivably need to operate. Accordingly, a menagerie of "biomorphic" robots can now be found scuttling, squirming and swimming in laboratories all round the world.

For instance, several separate efforts are now under way to build robotic fish that could be used to locate mines or take environmental readings. Understanding how fish manage to swim so quickly but expend so little energy could also lead to new propulsion systems for ships and submarines. This may explain why Mitsubishi Heavy Industries, a Japanese company whose activities include shipbuilding, has spent four years and $1m building an incredibly lifelike robotic sea bream. (The company now plans to move on to recreating extinct fish for display in museums.) Similarly inspired robotic pike and tuna have been built at the Massachusetts Institute of Technology.

But a robot does not have to look like an animal to borrow useful ideas from the animal kingdom. Mark Tilden and his colleagues at Los Alamos National Laboratory in New Mexico, who have been building animal-like robots for years, have now applied their knowledge to create a system that will operate in one of the environments that natural selection has not yet managed to penetrate — outer space. Their latest robot is designed to keep satellites on station.

Dr. Tilden is concerned not so much with what animals look like as with how their nervous systems work. As every schoolboy discovers, pulling some of the legs off a spider does not stop it walking. Its nervous circuitry can adjust to such injuries. That is because, unlike most modern computers (including those that control Aibo), much of that circuitry is analogue rather than digital.

In a digital computer, information is sent around as discrete bits and bytes. If a critical bit goes missing, and the programme has not been prepared in advance for the possibility of such a loss, it breaks down. With analogue circuitry, however, there is no such thing as an independent, critical piece of data — everything is coupled together as one continuous flow of current. If some information goes missing (for example, because a schoolboy has amputated a leg), the output will change — but it could still be meaningful. Dr. Tilden's robots use cheap and basic electronic components such as transistors, resistors and capacitors, rather than fancy microelectronic silicon chips. Yet their behaviour is so lifelike that they can sometimes "spook" those afraid of real spiders.

These robots, like Aibo, are toys. But a satellite-navigation system is a serious, practical application. Dr. Tilden's design for such a system is being tested in an experimental Swedish satellite called Hugin. Its task is to keep Hugin's electricity-generating solar panels pointed at the sun. It has a dozen light-sensors, each connected to a circuit whose natural oscillation is modulated by the strength of the incoming illumination. Those circuits, in turn, control the satellite's attitude jets. If the satellite moves off station, the amount of light falling on the sensors will change, and its analogue circuitry will tell the jets how much to fire to bring it round to face the correct way. It may not be as photogenic as a robotic dog, but it is certainly a lot more useful.

Questions 14-29

Complete the summary below. Choose NO MORE THAN THREE WORDS from the reading passage and write them in boxes 14-29 on your answer sheet.

The Japanese company Sony has launched its latest product, a robotic dog, on the market. The robotic dog is advertised to have __14__ behaviour patterns and __15__ feelings. In fact, the robotic dog was designed under the inspiration of __16__ rather than technology. For example, finding out why fish moves so quickly with __17__ consumed will help produce __18__ for submarines. That is why Mitsubishi Heavy Industries has been building a __19__ and MIT has already produced __20__. Knowledge of __21__ has also been used in creating a system operating in __22__. In designing such a system, what scientists are most __23__ is not what animals look like, but how __24__ work, because if computers have __25__ rather than digital one, computers will not __26__ if a critical piece of information __27__. A satellite-navigation system is now __28__ in a Swedish satellite. It may not be as pleasant-looking but it will be more useful than __29__.

Reading Passage 3:

(You should spend about 20 minutes on Questions 30-41 which are based on Reading Passage 3.)

Disney Revs Up for a New Park

The early struggles of Disneyland Paris, which Walt Disney Co. opened at Marne-la-Vallee east of Paris in 1992, may have led some to believe that Europeans don't like amusement parks. But in fact, the eventual huge success of the park prompted Disney to announce in September that it would build a second theme park next door to the first.

The Paris newspaper *Liberation* recalled that some had described the arrival of the first park as a "cultural Chernobyl". Yet that did not deter Disney, which owns 39 per cent of the company that runs Disneyland Paris, from announcing plans for a new $615 million, 25-hectare park that will focus on film studios, animation and television.

The opening is planned for April 2002, 10 years from the inauguration of the first park. Nor did it discourage the authorities, who are delighted with the prospect of 5,000 jobs the new park is expected to generate.

Whatever some Europeans may think about theme parks, the majority seem to be voting with their feet. In the fiscal year that ended Sept. 30, Disneyland Paris drew 12.5 million visitors, more than any other attraction in France. Only about 41 per cent were from France, with 17 per cent from Belgium, Luxembourg and the Netherlands, 15 per cent from Britain and 10 per cent from Germany.

"In California, we needed 35 years to reach those results, even though the park there is larger," said Gilles Pelisson, chief executive of Euro Disney SA, the company that operates the French Disney Park.

The planned studio park is not a first for Europe. A park called Movie World near Bottrop, Germany, was recently sold by Warner Brothers, the film and entertainment unit of Time Warner, to an American company called Premier Parks; Warner Bothers and Premier are building another movie park outside Madrid, to open in 2002.

The Disney project will have the familiar features: guided tours of television and movie studios, demonstrations of special effects, a half-hour stunt show in which actors portraying secret agents attempt to arrest a band of terrorists on a set that re-creates a Mediterranean Village.

Disney's entry into the world of European theme parks was not an easy one. It spent roughly $5 billion, much of it borrowed, to develop the original park, only to swing open its pink Victorian gingerbread gatehouse in 1992 in the midst of a European recession.

The park's hotels drew so few guests that some had to be shuttered temporarily. To hold costs down, Disney kept salaries low, which over the years has led to strikes by mainly low-paid performers. Moreover, Disney's original marketing strategy proved a flop. Originally named of Euro Disneyland, signalling the parent company's intention to reach out to all of Europe, the park was soon quietly rebaptized Disneyland Paris, in recognition of the need to focus on national markets.

Advertising was also redesigned along national lines, taking into account the fact that features of the park that appealed, say, to Germans would not be the same ones that drew Dutch or British visitors. Wine was added to Disney menus, an omission that had irritated the French, and perhaps most important, ticket prices were temporarily reduced.

Thanks to these initiatives, annual attendance quickly took off.

By the mid-1990s, Disneyland Paris was attracting more than 9 million visitors a year. Still, as the interest burden on Euro Disney's debt caused financial losses to mount, the company was forced in 1995 to obtain a five-year debt rescheduling agreement from banks and forfeiture of management fees from the parent Walt Disney Co..

For the financial year 1998-99, Euro Disney has reported a $24 million net profit. Though that was 46 per cent less than the year before, the drop was attributed mainly to a resumption of Euro Disney's payment of management fees to the Walt Disney Co. and to stagnant attendance, which was hurt by the World Cup soccer tournament in France in the summer of 1998.

Even so, Disney was buoyed by the rise in occupancy rates at the six big hotels at Disneyland Paris to 82.6 per cent for the year ending in September, from 80.9 per cent the year before.

So successful has the park been at drawing crowds that some local politicians in the Marne-la-Vallee area are growing nervous. Euro Disney is pushing to increase the returns on land it bought in the early phase of the project, and this spring a mega-mall built by an outside developer, and designed to be Europe's largest, is set to open at Serris, next door to the original park.

On one weekend in late October, when crowds flooded into Disneyland Paris, highways leading to the park were completely blocked by traffic. The addition of the Serris mall, plus the new park, some local leaders say, will lead to continuous gridlock.

In November, the local Communist Party demanded an immediate study of the possible impact the mall and park will have on local roads. Then the conservative Rally for the Republic appealed to the ministers responsible for early action to double the size of the A4 highway that links the capital and the park.

Questions 30-38

Do the following statements agree with the view of the writer in Reading Passage 3? In boxes 30-38 on your answer sheet, write

YES	*if the statement agrees with the view of the writer;*
NO	*if the statement contradicts the view of the writer;*
NOT GIVEN	*if it is impossible to say what the writer thinks about this.*

Example:	Answer:
Disneyland Paris was originally named Euro Disney.	*YES*

30. Disneyland Paris was not an immediate success.
31. Most Europeans liked theme parks.
32. Disneyland Paris was the first theme park in Europe.
33. Disneyland Paris has created more jobs than any other attractions in Paris.
34. Poor marketing strategies caused low attendance of the theme park, Disneyland Paris.
35. In the mid-1990s, Disneyland Paris was still suffering from financial losses.
36. World Cup '98 brought many visitors to Disneyland Paris.
37. Local politicians are concerned about the possible impact of the park on the local roads.
38. The A4 highway leading to the park from Paris will be widened.

Questions 39-41

The reading passage mentions a number of factors which have led to the rise of Disneyland Paris' attendance. With THREE of the following factors are mentioned? Write your answers (A-F) in boxes 39-41 on your answer sheet.

List of Factors

A. Reduction of hotel prices
B. Renaming the park
C. Reduction of ticket prices
D. Advertisements redesigned to attract people from different countries
E. Increase of performers' salaries
F. Addition of stunt shows

39. ________ 40. ________ 41. ________

Answer Key

Unit One **Matching the Headings**

Exercise 1: A Giant Step for Artificial Enzymes

1. D 2. F 3. G 4. C 5. H 6. E

7. Almost 60,000 times as fast as usual.

8. Diels-Alder reaction.

9. The creation of six-membered rings.

Exercise 2: Population Growth and Food Supply

1. B 2. H 3. G 4. J 5. A 6. F 7. B 8. 1972

9. Any two of the following: quantity, quality, poverty, distribution, ecological side-effects

10. Any two of the following: developing new hybrids, increasing the use of fertilizers, water, pesticides and herbicides, using modern techniques

11. Pakistan / India

12. Burma / Bangladesh / Thailand / Malaysia / Vietnam / the Philippines

13. Mexico

Exercise 3: More Than Sympathy

1. i 2. v 3. iv 4. vi 5. ix 6. vii

Exercise 4: Energy from Biological Sources

1. vii 2. i 3. v 4. iv 5. vi 6. ii 7. viii 8. x 9. T
10. T 11. F 12. T 13. F 14. F 15. T

Exercise 5: Sleeping Secrets

1. iii 2. i 3. vii 4. xiii 5. iv 6. x 7. ii 8. vi 9. ix
10. v 11. xii

Exercise 6: It Never Rains

1. x 2. vii 3. ii 4. xiv 5. i 6. vi 7. iii 8. xii
9. v 10. ix

Exercise 7: Farmers Harvest the Wind

1. iii 2. i 3. iv 4. viii 5. vi 6. ii

Exercise 8: Germs and Sickness in a Shrinking World

1. ix 2. vi 3. viii 4. vii 5. i 6. iv 7. v

Exercise 9: On the Wing

1. vi 2. xiv 3. ii 4. xii 5. xi 6. ix 7. i 8. xiii 9. viii
10. vii 11. iv 12. YES 13. NOT GIVEN 14. NO

Unit Two Cloze

Exercise 1: Standards of Measurement

1. I 2. N 3. E 4. O 5. A 6. P 7. R 8. G 9. M
10. B 11. Q 12. H 13. S

Exercise 2: The Function of Carbon Dioxide in the Atmosphere

1. I 2. A 3. F 4. J 5. N 6. B 7. G 8. Q 9. O
10. S 11. C 12. K 13. P

Exercise 3: The Properties of Systems in the Human Body

1. N 2. A 3. F 4. K 5. O 6. I 7. B 8. E 9. L
10. R 11. Q 12. S 13. H

Exercise 4: **Analysis and Synthesis**

1. B 2. H 3. L 4. C 5. M 6. I 7. N 8. P 9. D
10. R 11. J 12. O 13. E

Exercise 5: **The Properties of Elements, Compounds and Mixtures**

1. F 2. K 3. M 4. B 5. H 6. O 7. I 8. E 9. R
10. S 11. A 12. Q 13. L

Exercise 6: **The Structure of the Earth**

1. M 2. J 3. A 4. G 5. P 6. N 7. S 8. I 9. B
10. E 11. K 12. R 13. D

Exercise 7: **The Carbon Cycle**

1. I 2. G 3. A 4. J 5. E 6. M 7. R 8. C 9. K
10. O 11. L 12. H 13. D

Exercise 8: **Vitamins**

1. K 2. D 3. L 4. N 5. E 6. H 7. S 8. J 9. P
10. A 11. F 12. B 13. Q

Exercise 9: **Thermostats**

1. K 2. M 3. B 4. H 5. O 6. I 7. E 8. R 9. S
10. A 11. Q 12. L 13. C

Exercise 10: **Pressure**

1. C 2. L 3. B 4. M 5. N 6. F 7. I 8. O 9. Q
10. A 11. R 12. J 13. E

Exercise 11: Importance of Nonverbal Communication

1. I 2. B 3. S 4. K 5. A 6. P 7. H 8. M 9. D
10. L 11. R 12. G 13. C

Exercise 12: Space and Distance

1. C 2. L 3. G 4. O 5. Q 6. D 7. R 8. H 9. N
10. B 11. I 12. S 13. J

Exercise 13: Humour

1. H 2. M 3. E 4. N 5. I 6. A 7. O 8. P 9. J
10. Q 11. B 12. S 13. F

Exercise 14: The Theory of Emotion

1. A 2. L 3. P 4. B 5. E 6. Q 7. G 8. M 9. H
10. C 11. R 12. K 13. N

Exercise 15: Physical Characteristics

1. K 2. L 3. N 4. E 5. R 6. M 7. F 8. O 9. A
10. G 11. P 12. H 13. B

Exercise 16: Attitude Functions

1. I 2. G 3. L 4. O 5. B 6. P 7. J 8. M 9. C
10. Q 11. E 12. N 13. F

Exercise 17: Contemporary Forms of Discussion

1. A 2. F 3. I 4. B 5. N 6. G 7. J 8. C 9. L
10. M 11. H 12. P 13. D

Exercise 18: Functions of Leadership

1. H 2. L 3. O 4. C 5. M 6. Q 7. D 8. A 9. N
10. I 11. R 12. E 13. S

Unit Three Multiple Choice

Exercise 1: Are You a Machine of Many Parts?

1. D 2. A 3. B 4. C 5. B 6. C 7. B 8. B
9. A 10. D

Exercise 2: Making Allowances for Your Kids' Dollar Values

1. A 2. C 3. C 4. A 5. B 6. C 7. D 8. B 9. B

Exercise 3: The Lost City of DeMille Emerges from the Desert Sands of California

1. D 2. A 3. C 4. A 5. B 6. B

Exercise 4: Separate, But EQ

1. D 2. A 3. C 4. C 5. A

Unit Four Summarizing

Exercise 1: Adapting to Road Conditions

1. take back control 2. speed 3. radar
4. the system's reaction time 5. 13% 6. the flow of traffic
7. a panacea 8. complex road / bottleneck 9. headway

Exercise 2: Who's Crazy? Who Says Who Is Mad?

1. A 2. B 3. B 4. C 5. C 6. A 7. D 8. C 9. B
10. C 11. T 12. T 13. F 14. NI 15. F 16. F 17. shamming
18. E 19. H 20. M 21. B 22. A 23. L 24. F 25. I

Exercise 3: Biogas: a Solution to Many Problems

1. fermentation 2. developing 3. crisis 4. plants 5. dung
6. cooking and lighting 7. sanitation / (environmental) hygiene
8. waste(s) / slurry 9. fertilizer 10. biogas

Exercise 4: A 19th Century Killer Disease: Tuberculosis

1. killer 2. contagious 3. droplet 4. necessarily
5. acquired immunity 6. less 7. previously
8. infection 9. contributing factor 10. silicosis
11. immunity / resistance 12. (mass) immunization

Exercise 5: For Each Astronaut, a "Buddy"

1. personal assistants 2. American and Russian 3. envision
4. range from 5. personal satellite assistants / PSA 6. propelled
7. sensors 8. run into things / got lost 9. wireless data network
10. International Space Station 11. environmental problems

Exercise 6: Management in Cyberspace

1. stands for 2. the office 3. up to six
4. Each participant 5. a moderator 6. avatars / participants
7. in the open 8. private chats 9. transmit sound
10. an agenda 11. settle a dispute 12. on the Internet

Exercise 7: Our Dying Seas

1. extinction
2. threats
3. caused
4. consequences
5. increase
6. produce
7. belated
8. stop
9. scientific knowledge
10. indiscriminate
11. Plankton
12. mass starvation
13. armed
14. the 200-mile economic zone

Exercise 8: Ethics and Archaeology

1. ethical concerns / considerations
2. the artefacts
3. the sites
4. the public
5. the number one priority
6. archaeological training
7. adopted
8. NO
9. YES
10. NOT GIVEN

Unit Five YES/NO/NOT GIVEN

Exercise 1: The World of the Flat-footed Fly

1. NO
2. YES
3. YES
4. NO
5. NOT GIVEN
6. NO
7. NOT GIVEN
8. YES
9. NO
10. YES
11. YES
12. NOT GIVEN
13. YES
14. NO

Exercise 2: Energy, Fission and Fusion

1. v
2. x
3. i
4. vii
5. iv
6. vi
7. ix
8. xi
9. FALSE
10. TRUE
11. TRUE
12. TRUE
13. FALSE
14. FALSE
15. FALSE
16. TRUE

Exercise 3: Will Britain Turn Its Back on Wave Power?

1. YES
2. YES
3. YES
4. YES
5. NOT GIVEN
6. NO
7. NOT GIVEN
8. NOT GIVEN
9. YES
10. NOT GIVEN
11. YES
12. NO
13. NO
14. NOT GIVEN
15. YES
16. YES

Exercise 4: Talk to Kids about Drugs? Parents Just Don't Do It

1. NO
2. NO
3. YES
4. NO
5. NOT GIVEN
6. YES
7. YES
8. NO
9. NO
10. NOT GIVEN
11. YES
12. NOT GIVEN

Exercise 5: A New Learning Tool

1. NO
2. NOT GIVEN
3. YES
4. NO
5. NO
6. YES
7. NO
8. NO

Exercise 6: Ill Winds

1. YES
2. NO
3. NO
4. NO
5. NOT GIVEN
6. YES
7. NO
8. NOT GIVEN
9. YES

Exercise 7: Stuffed

1. NO
2. NOT GIVEN
3. NO
4. YES
5. NO
6. NO
7. Obesity
8. static
9. niche
10. Fair trade

Exercise 8: Brain Drain

1. NO
2. NO
3. NOT GIVEN
4. NO
5. NO
6. YES
7. YES
8. NO
9. YES
10. NO
11. YES
12. YES
13. NO

Unit Six Scanning for Answers

Exercise 1: Will Antarctic Ozone Bite the Dust?

1. 12-20 km
2. 17-18 km
3. 83%
4. 93%
5. T
6. F
7. T
8. F

Exercise 2: A Light Bulb that Lasts

1. By heating something until it glows.
2. By the excitation of phosphor atoms coating the inside of a glass cylinder.

3. I 4. I 5. E 6. E 7. I 8. B

Exercise 3: Elemental Clues to a Galaxy's Past

1. B 2. A 3. B 4. C 5. B 6. C 7. A 8. A 9. C
10. B 11. B

Exercise 4: Vital Role in World Airline Industry

1. 1) Glamour. 2) Cheap staff travel.
2. 1) Radio. 2) Teletype. 3) Telephone. 4) Data processing.
3. Passing messages between grounds and airliners.
4. Passing low-speed internal company messages.
5. Off-peak travel season: 30,000 Peak travel season: 40,000
6. Reservations: BA computer; London
   Engineering inventory: Alitalia computer; Rome
7. BA computer in London.
8. payroll, (finance,) flight-crew scheduling, (and) flight operations rosters
9. 7,000.
10. Within 20 seconds.
11.

	Number of Calls Answered Per Day	Percentage of Calls Replied to within 20 Seconds
Jiddah, Saudia	7,000	90
Airline Industry Average	////////////////////	80

Exercise 5: Tough Sensor Can Take the Heat

1. below 150°F 2. ceramic and metals 3. silicon
4. measure oxygen 5. detect gases 6. high temperatures
7. each gas 8. characteristic voltage 9. the size
10. measure oxygen 11. 4 12. 1 13. 5 14. 3

Exercise 6: Model Atmosphere Shows Signs of Life

1. 1) H_2O 2) CO_2 3) N
2. The exchange of CO_2 between the atmosphere and silicate rocks in the Earth's crust.
3. It reduced the density of the Venusian atmosphere to about that of the Earth.
4. 1 AU / 150 million km 5. 1.5 AU / 228 million km
6. habitable 7. too cold 8. too hot 9. in its first billion years
10. in its first several million years 11. too small to retain its internal heat
12. water was almost gone 13. 460°C

Unit Seven Integrated Exercises

Exercise 1: Earthquakes

1. D 2. I 3. B 4. G 5. K
6. expansion and contraction of the earth's crust
7. pressure 8. rupturing / breaking of rocks
9. collapse of buildings 10. landslides 11. tsunamis
12. major fires 13. T 14. F 15. T 16. T 17. T 18. T
19. F 20. F

Exercise 2: The Life Cycle of a City

1. 1918. 2. Developing countries. 3. 750 million.
4. A 5. C 6. E 7. A 8. D 9. I 10. G 11. B 12. J
13. H 14. L 15. 50 years. 16. Shift of population. 17. B 18. B
19. B 20. A 21. C

Exercise 3: A Sense of Crisis

1. C 2. A 3. D 4. E 5. B
6. NO 7. YES 8. YES 9. NOT GIVEN
10. NO 11. NOT GIVEN 12. NOT GIVEN 13. NO 14. YES

Exercise 4: Carcinogenic Dye in Hundreds of Food Products

1. The BSE crisis.
2. Fresh and canned foods. / Ready meals and cooking sauces.
3. Government food watch-dogs.
4. By chance.
5. Premier Foods.
6. Sudan 1.
7. C 8. E 9. D 10. G 11. H

Exercise 5: Saving the Seahorses

1. v 2. x 3. viii 4. iv 5. i 6. ix 7. YES
8. NOT GIVEN 9. NOT GIVEN 10. YES
11. NO 12. YES 13. YES

Exercise 6: Deadly Illusion Brings Death on the Road

1. NO 2. NOT GIVEN 3. YES 4. NO 5. NO
6. (being) hit/injured/killed 7. subconsciously 8. a child
9. farther away 10. collision / traffic accident 11. safety records
12. striped markings 13. pedestrian / person 14. pelican crossings

Exercise 7: How Safe Are Air Bags?

1. FALSE 2. FALSE 3. TRUE 4. TRUE
5. TRUE 6. TRUE 7. C 8. G 9. D
10. H 11. J 12. L 13. A

Exercise 8: Expanding Consciousness

1. awareness 2. Parkinson's 3. neurons 4. experience
5. continuum 6. brain arousal 7. determine 8. YES
9. NO 10. NO 11. NO 12. YES
13. NOT GIVEN 14. YES

Exercise 9: A Hare-brained Scheme

1. x 2. i 3. ix 4. viii 5. iv 6. xi 7. ii 8. vi
9. NO 10. YES 11. NOT GIVEN 12. NOT GIVEN 13. NO 14. E

Exercise 10: Hypnosis

1. 8 2. 2 3. 1 4. 9 5. 4 6. 6 7. 5 8. 3 9. 1
10. 8 11. 9 12. 5

Exercise 11: Technique of Difficult Intramedullary Nail Removal Utilizing the Midas Rex

1. Fix bone fracture. 2. After 6-24 months.
3. The eye or threads are altered. 4. Tetracyline. 5. 1978
6. C 7. A 8. E 9. B 10. D 11. 2 12. 4 13. 7 14. 6
15. 1 16. 3 17. 5 18. Availability of the carbide tool.

Exercise 12: Metal Compounds Which Break the Rules

1. B 2. D 3. C 4. A 5. N 6. U 7. U

Unit Eight Practice Tests

Practice Test (Version One)

1. i 2. xi 3. xii 4. vii 5. viii 6. iv 7. iii 8. acid rain
9. incomplete 10. NOX 11. before 12. hydrocarbon
13. industrial 14. vehicle 15. emissions 16. inside

17. later-borns 18. later-borns 19. first-borns 20. later-borns
21. NO 22. NOT GIVEN 23. NO 24. NOT GIVEN 25. YES
26. YES 27. C 28. D 29. A 30. B 31. 5 32. 11 33. 8
34. improve flight efficiency 35. improve navigation 36. cellular phones
37. surface links 38. Atlantic Ocean (West) 39. US $500,000

Practice Test (Version Two)

1. vii 2. ix 3. x 4. i 5. xi 6. v 7. ii 8. iv
9. a receiver 10. defects 11. much higher 12. buildings
13. the satellite 14. aviation authorities 15. a world standard
16. vi 17. ix 18. x 19. v 20. iv 21. ii 22. NO 23. NOT GIVEN
24. NO 25. YES 26. NO 27. NOT GIVEN 28. indicators 29. the definition
30. actively 31. fewer hours than 32. more than double
33. unemployed 34. NO 35. YES 36. YES
37. NOT GIVEN 38. NO 39. NO 40. NOT GIVEN

Practice Test (Version Three)

1. annual 2. well-paid 3. to row 4. (free) accommodation
5. graduate 6. decline 7. affluent 8. rowing tanks
9. NO 10. YES 11. YES 12. NO
13. NOT GIVEN 14. NOT GIVEN 15. NO 16. YES
17. YES 18. NO 19. YES 20. NOT GIVEN
21. A 22. C 23. B
24. (a modified) Boeing 747 (for Bush) 25. R530
26. SAM 27. nuclear weapon (bomb) 28. E
29. B, C, E 30. C 31. corticosteroids 32. leprosy
33. birth defects 34. sedative 35. sicker
36. sooth pain / eradicate lesions 37. the creation of 38. 9
39. 6, 7 40. 8, 10

Practice Test (Version Four)

1. i 2. vi 3. ix 4. ii 5. xi 6. x 7. iii 8. vii
9. NOT GIVEN 10. NO 11. NO 12. YES 13. NO 14. NOT GIVEN
15. C, F, G 16. A 17. E 18. propel
19. economic 20. lump-sum 21. pension 22. some big companies
23. medium-sized 24. maintain 25. Tokyo stock-market 26. demand
27. work hours / workload 28. networking 29. share files 30. set
31. operating system 32. sharing work 33. standards
34. 12 characters 35. different types 36. devising (flexible)
37. A 38. A 39. B 40. B, C

Practice Test (Version Five)

1. vi 2. v 3. ii 4. i 5. viii 6. iii 7. YES
8. NOT GIVEN 9. NOT GIVEN 10. NO 11. YES 12. NOT GIVEN
13. NO 14. YES 15. YES 16. YES
17. coping with 18. against teachers 19. frustration and stress
20. collapsed 21. a parent 22. less serious 23. metal detectors
24. the remaining two 25. individualism 26. breakdown
27. close-knit community 28. guidance 29. strictly enforced
30. i 31. iv 32. v 33. ii 34. start lining up 35. voice communication
36. broadcast its position 37. ADS-B 38. the best order

Practice Test (Version Six)

1. viii 2. x 3. v 4. ii 5. i 6. xi 7. vi 8. xiii
9. ix 10. vii 11. B, C, D 12. A, C 13. B, C, D
14. autonomous 15. simulated 16. biology 17. so little energy
18. new propulsion systems 19. robotic sea bream
20. robotic pike 21. the animal kingdom 22. outer space
23. concerned with 24. their nervous systems 25. analogue circuitry
26. break down 27. goes missing 28. being tested
29. a robotic dog 30. YES 31. YES 32. NO
33. NOT GIVEN 34. YES 35. NO 36. NO
37. YES 38. NOT GIVEN 39-41. B, C, D